

PROJECT PERFORMANCE REPORT — 2004

Regional Operations and Technical Assistance
Programs in the San Francisco Bay Area
Fiscal Year 2003–04



April 2005



Published by the
Metropolitan
Transportation
Commission

Front cover photo credits: (Top row, left to right) tow truck driver – George Draper; TransLink® customer – John Blaustein; carpool – George Draper; roadwork – George Draper; 511 banner – Kit Morris; (bottom row) FasTrak™ lane at Carquinez Bridge toll plaza – Caltrans; traffic signal – PhotoDisc; traffic center – City of San José; woman at call box – MTC photo archives

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INTRODUCTION

The primary objective of the Metropolitan Transportation Commission (MTC) is to plan for and deliver a safe, efficient, integrated, multimodal transportation system for the San Francisco Bay Area. The system envisioned by MTC is one that successfully serves the diverse travel needs of all of the Bay Area's residents.

MTC has crafted its 25-year vision for the Bay Area's transportation system — the Transportation 2030 Plan, adopted in February 2005. With limited resources and seemingly unlimited need, the plan strives to strike a delicate balance between competing transportation priorities. MTC believes that one critical component of the transportation system of the future is regional operations and technical assistance projects that promote a safe and well-maintained system and contribute to a reliable commute. Such projects seek to improve physical and institutional connections in the transportation system, provide real-time information to help the region's residents make travel decisions, and respond to customer needs. Consistent with this belief, the Commission took the initiative to commit some of the region's discretionary transportation funds over the next 25 years to regional projects as part of Phase 1 of the Transportation 2030 planning process.

MTC's 2003 Annual Report shined a bright light on the agency's transition from a traditional metropolitan planning organization to a multi-service transportation agency that directly manages transportation projects, showcasing the individuals who regularly use MTC products and services. MTC's projects are successful because the Commission places a priority on institutional partnerships, innovative technologies and customer focus.

- Partnership — In the Bay Area, multiple agencies are responsible for designing, building, operating and maintaining the transportation system. Coordination among these many stakeholders is key in implementing projects that cross jurisdictional boundaries.
- Technology — New technologies can improve the efficiency of the transportation system. Technology also has the ability to make the transportation system more user-friendly for the public.
- Customer Focus — Today's travelers are savvy consumers of transportation services and expect convenience and a range of travel options. Transportation service providers must maintain a strong customer focus in order to meet the public's needs and help them use the system efficiently.

As the agency responsible for overseeing regional transportation projects, MTC strives to deliver cost-effective procurements, partner coordination, and accountability through advisory committee oversight and pragmatic performance monitoring. (See Appendix for project-specific information on advisory and oversight committees.) In addition, MTC is making more use of innovative contracting strategies such as performance incentives.

The *2004 Project Performance Report* provides an update on regional operations and technical assistance program funding and tracks project performance. Projects in this year's report are grouped around four operational themes covering ten different programs:

- Electronic Fare Payment
 - TransLink®
 - FasTrak™
- 511 Traveler Information
 - 511 — TravInfo®
 - 511 — Regional Rideshare Program
 - 511 — Regional Transit Information System
- Incident Management
 - Call Box Program
 - Freeway Service Patrol
- Technical Assistance
 - Pavement Management
 - Regional Signal Timing Program
 - Traffic Engineering

Many positive steps were taken in fiscal year (FY) 2003–04 with respect to regional project implementation and ongoing operations. Such efforts have been rewarded with peer recognition as well as favorable public response. During this past year,

- In partnership with the Golden Gate Bridge, Highway and Transportation District, the Bay Area Toll Authority (BATA) assumed responsibility for procuring electronic toll collection (ETC) customer services on all Bay Area toll bridges. Following passage of the Regional Measure 2 (RM 2) \$1 toll increase in March 2004, BATA adopted a temporary \$1 promotional discount on tolls for FasTrak™ users to encourage ETC usage.
- The 511 traveler information program (TravInfo®, the Regional Transit Information System [RTIS] and the Regional Rideshare Program) made progress consolidat-

ing different types of traveler information under a single Web site and telephone number for public access. TravInfo® launched the new 511 Driving TimesSM feature for point-to-point freeway travel times and the new traffic.511.org Web site. RTIS debuted the new transit.511.org Web site and incorporated several more transit operators in the TakeTransit Trip PlannerSM. The rideshare program improved overall performance compared to FY 2002–03.

- The Intelligent Transportation Society of America recognized the 511 traveler information program with its “Best New Product, Service or Application” award. The California Alliance for Advanced Transportation Systems honored 511 with the “Best Public Innovation” and “Best Partnership” awards.
- The region continued on the path toward implementation of the TransLink® universal fare payment system, including execution of the TransLink® Interagency Participation Agreement, which established the TransLink® Consortium, and approval of a deployment schedule through 2005.
- The MTC Service Authority for Freeways and Expressways (SAFE) began its planned reduction of the Bay Area’s call box network, consistent with recommendations in the Call Box Strategic Plan.
- The Freeway Service Patrol (FSP) continued implementation of its strategic expansion plan, which resulted in additional hours of service on the existing 31-beat network and an increase in motorist assists.
- The Pavement Management and Traffic Engineering Technical Assistance programs (P-TAP and TETAP, respectively) awarded grants to local jurisdictions to improve pavement management and maintenance practices and solve traffic engineering problems. The Regional Signal Timing Program (RSTP) awarded grants to retune 630 traffic signals, approximately ten times more than previously funded in a single year by MTC.

Looking Ahead

MTC’s project-specific goals for FY 2004–05 include the following:

- TransLink® will progress toward regional deployment. AC Transit, Golden Gate Transit, BART, San Francisco Muni and Caltrain will continue preparing for their scheduled FY 2005–06 and FY 2006–07 deployments. Valley Transportation Authority (VTA) will finalize its deployment schedule and prepare for equipment installation.
- FasTrakTM will open a new regional customer service center in San Francisco, consolidating account services for the Bay Area’s seven state-owned toll bridges and the Golden Gate Bridge, and add more dedicated lanes at toll plazas.
- TravInfo® will expand its new 511 Driving TimesSM service to include all major Bay Area freeways and bridges by FY 2005–06.
- RTIS will take steps to upgrade the TakeTransit Trip PlannerSM software and beef up the system to meet growing demands.
- MTC will conduct a new procurement for Regional Rideshare Program services. The procurement will complement anticipated procurements for the other 511 traveler information projects (TravInfo® and RTIS). Counties will be able to elect to provide local employer outreach services on behalf of the regional program, and be compensated with regional funds.
- The Call Box Program will continue the strategic reduction of the number of call boxes in its regionwide network, initiate an upgrade of call box communications technology and conduct a new procurement for call center services. As an alternative means of motorist-aid communications, MTC will test a closed-circuit television (CCTV) incident detection system.
- Contracts for tow truck services for two-thirds of FSP beats will be rebid. A pilot project to improve the existing process for clearing major freeway incidents will be explored.
- The Traffic Engineering Technical Assistance Program, Pavement Management Program and Regional Signal Timing Program will award a new round of grants to local jurisdictions. P-TAP will pursue pilot projects to improve pavement data collection and consistency.

PROJECT PERFORMANCE REPORT

REGIONAL OPERATIONS AND TECHNICAL ASSISTANCE PROGRAM FUNDING

Regional Operations and Technical Assistance Program Funding

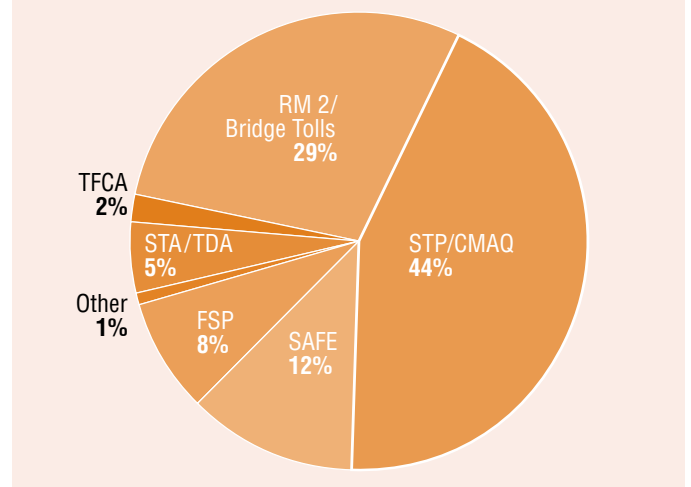
In the 2001 Regional Transportation Plan, the Commission established a policy for funding regional projects with dedicated federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement program (CMAQ) funds. The Commission reaffirmed this policy through the December 2003 commitment of STP and CMAQ funds as part of the Transportation 2030 planning process. At that time, the Commission also dedicated a substantial portion of its regional discretionary share of State Transit Assistance (STA) funds to MTC's regional operations projects. Commitment of STP, CMAQ and STA funds demonstrates the Commission's support for the delivery of regional projects as a cost-effective way to increase the productivity of the transportation system.

Funding for MTC-sponsored regional projects accounts for a relatively small — but significant — percentage of the Bay Area's total STP and CMAQ revenues each year. As shown in Figure 1, 15.1 percent (or \$422.5 million) of the \$2.8 billion in STP/CMAQ funds that Transportation 2030 assumes will flow to the Bay Area over the 25-year planning horizon would be spent on the projects presented in this report. (For the purpose of this funding discussion and the entire Project Performance Report, all dollar amounts are presented in 2004 dollars.)

Figure 2 shows actual and anticipated programming of funds to regional operations and technical assistance projects. Over the five-year period from FY 2003–04 to FY 2007–08, 56 percent of project funding comes from state and local sources rather than from the STP or CMAQ programs. In the five-

figure 2

Five-Year Regional Operations and Technical Assistance Program Funding Snapshot,* Fiscal Years 2003–04 to 2007–08

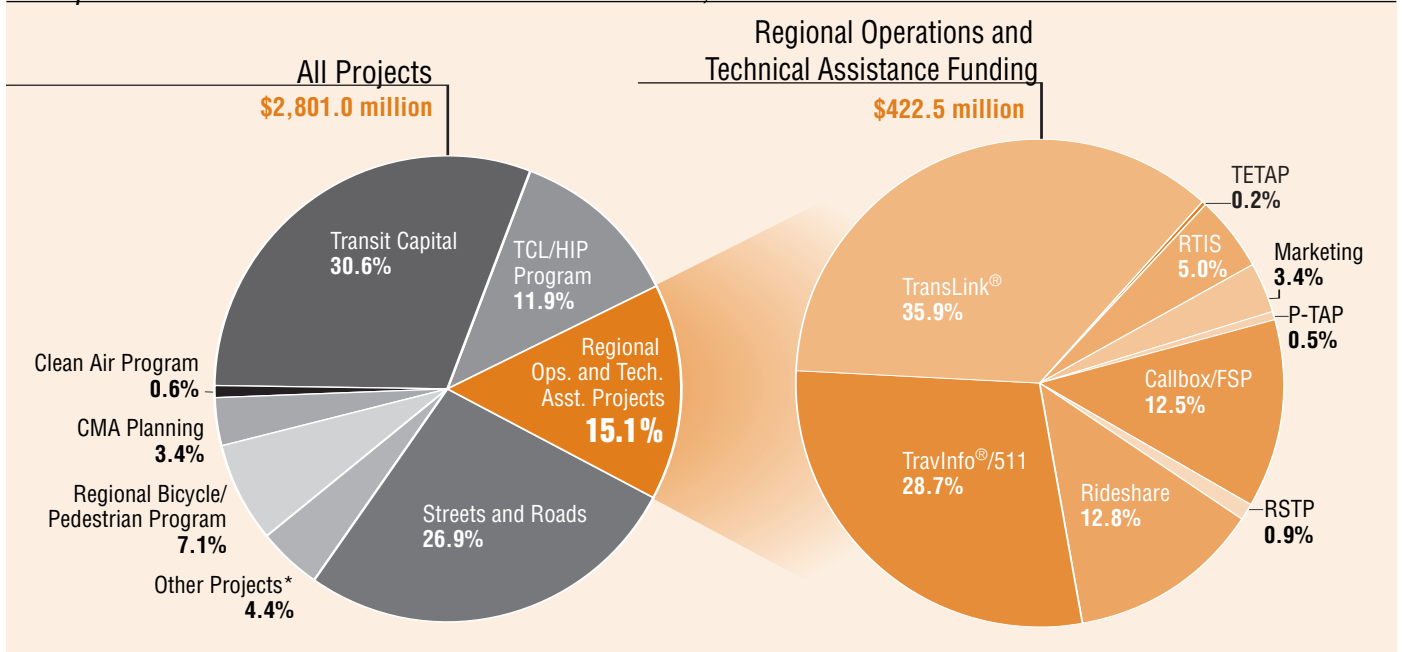


* Abbreviations: STA – State Transit Assistance; TDA – Transportation Development Act; TFCA – Transportation Fund for Clean Air; STIP – State Transportation Improvement Act; RM 2 – Regional Measure 2

Note: Percentages do not sum to 100 percent due to rounding.

figure 1

Transportation 2030 Commitment of STP/CMAQ Funds, Fiscal Years 2004–05 to 2028–29*



* "Other Projects" includes \$49.7 million for Freeway Operations and \$3.5 million for Performance Monitoring, which are not addressed in this report.

year period reported on in last year's *Project Performance Report* (FY 2002–03 to FY 2006–07), only 42 percent of project funds were from sources other than STP and CMAQ. The change in the funding profile is largely attributed to:

- Inclusion of new local revenues such as Regional Measure 2 funds
- Inclusion of the FasTrak™ project, which does not receive any STP or CMAQ funds, in the 2004 *Project Performance Report*

figure 3

Five-Year Project Funding Needs Summary

(In thousands of 2004 dollars)		Fiscal Year							
Project		Funding Source	03-04	04-05	05-06	06-07	07-08	5-Year Total	Percent of Total
Electronic Payment	TransLink®	STP/CMAQ	\$10,400	\$23,107	\$17,438	\$ 6,406	\$ 2,488	\$ 59,839	52%
		Other	1,707	3,905	17,909	18,563	13,055	55,139	48%
		Total	12,107	27,012	35,347	24,969	15,543	114,978	
	FasTrakTM	STP/CMAQ	0	0	0	0	0	0	0%
		Other	10,000	6,300	10,500	6,800	7,000	40,600	100%
		Total	10,000	6,300	10,500	6,800	7,000	40,600	
511 Traveler Information	TravInfo®	STP/CMAQ	6,000	5,146	2,828	7,230	7,108	28,312	87%
		Other	927	927	357	941	896	4,048	13%
		Total	6,927	6,073	3,185	8,171	8,004	32,360	
	Regional Rideshare Program	STP/CMAQ	4,800	2,718	3,016	3,020	1,955	15,509	77%
		Other	1,000	971	943	915	888	4,717	23%
		Total	5,800	3,689	3,959	3,935	2,843	20,226	
	Regional Transit Information System	STP/CMAQ	700	777	848	824	888	4,037	78%
		Other	678	101	110	107	115	1,111	22%
		Total	1,378	878	958	931	1,003	5,148	
Incident Management	Call Box and FSP programs	STP/CMAQ	0	0	1,131	1,098	4,087	6,316	11%
		Other	11,070	10,438	11,571	9,733	9,644	52,456	89%
		Total	11,070	10,438	12,702	10,831	13,731	58,772	
Technical Assistance Programs	Pavement Management (P-TAP)	STP/CMAQ	700	680	754	732	0	2,866	89%
		Other	91	88	98	95	0	372	11%
		Total	791	768	852	827	0	3,238	
	Regional Signal Timing	STP/CMAQ	1,200	1,165	1,320	1,373	0	5,058	89%
		Other	155	151	171	178	0	655	11%
		Total	1,355	1,316	1,491	1,551	0	5,713	
	Traffic Engineering (TETAP)	STP/CMAQ	250	243	283	275	0	1,051	89%
		Other	32	31	37	36	0	136	11%
		Total	282	274	320	311	0	1,187	
TOTALS	All Regional Operations and Technical Assistance Projects	STP/CMAQ	24,050	33,836	27,618	20,958	16,526	122,988	44%
		Other	25,660	22,912	41,696	37,368	31,598	159,234	56%
		Total	\$49,710	\$56,748	\$69,314	\$58,326	\$48,124	\$282,222	

- A reduction in STP/CMAQ funds for the Regional Rideshare Program beginning in FY 2007–08
- A reduction of STP/CMAQ programming for three technical assistance projects (Pavement Management, Regional Signal Timing and Traffic Engineering) beginning in FY 2007–08

Details on funding for specific projects, including any significant changes in funding from the *2003 Project Performance Report*, are included in the “Project Funding” section of the individual project analyses that follow.

Figure 3 displays the total and annual funding needs for the regional projects. STP/CMAQ funding amounts in FY 2003–04 and FY 2004–05 represent actual or programmed funds while FY 2005–06 through FY 2007–08 amounts represent needs anticipated under Transportation 2030 which are yet to be programmed. It is important to note that funding information does not necessarily represent project costs in any given year.

PROJECT PERFORMANCE REPORT

ELECTRONIC PAYMENT PROGRAM

Electronic Payment Program

One of the key regional strategies for improving transportation efficiency is electronic payment, including the TransLink® program for transit fares and the FasTrak™ program for collecting bridge tolls. Such payment mechanisms offer greater customer convenience, can speed transaction times through toll booths and on transit systems, and enhance seamless regional travel by making services connect even when operated by separate institutions. For toll and transit system operators, electronic payment systems have the potential to simplify operations and increase efficiency by improving throughput, allowing greater flexibility in setting toll and fare rates, reducing costs associated with cash management, minimizing system fraud and supporting enhanced data collection for planning purposes.

MTC works with the region's transit operators to implement the TransLink® smart card fare payment system in the Bay Area. With approval from the six largest transit operators, TransLink® is now ready for regional implementation. To pave the way for Phase 2, MTC helped craft an Interagency Participation Agreement and establish the multi-operator TransLink® Consortium that will administer the full rollout and ongoing operation of the TransLink® program.

The TransLink® project has given MTC significant experience with managing complex technology- and customer service-oriented projects. Building on this as well as MTC's dual role as the Bay Area Toll Authority, MTC agreed to assume responsibility for the FasTrak™ toll collection customer service center from Caltrans in the spring of 2004. BATA will likewise take over operation of the Golden Gate Bridge, Highway and Transportation District center in the summer of 2005.

Information on the FasTrak™ program is included in the Project Performance Report for the first time in this report.

TransLink®: Universal Fare Payment System

TransLink® is the Bay Area's universal fare payment system for public transportation, based on smart card technology. With TransLink®, transit riders will be able to use a single card to pay their fares on buses, trains, light-rail vehicles and ferries all around the region. Phase 1 of the project included the design and manufacture of the basic components of the TransLink® system, a six-month pilot program, and a comprehensive evaluation, all of which concluded at the end of 2002. Phase 2 of the project includes full regional implementation and ongoing operation and maintenance of the system.

MTC has executed a design-build-operate-and-maintain (DBOM) contract with Motorola, Inc. and subcontractor ERG for both Phases 1 and 2. The TransLink® Consortium, (see below) functions as the interagency decision-making body for the TransLink® fare collection system, providing direction to MTC on program implementation.

Project Objectives

To establish a single regional fare collection system in order to:

- Improve passenger convenience in making inter- and intra-agency trips
- Improve efficiency and security of the region's fare collection system
- Improve transit system data collection for service planning and the development of fare policies
- Allow participation in revenue-enhancing or cost-saving business partnerships with the private sector

Highlights

FY 2003-04 highlights include the following:

- The six Phase 1 transit operators (AC Transit, BART, Golden Gate Transit, Muni, SamTrans and VTA) executed the TransLink® Interagency Participation Agreement, establishing the TransLink® Consortium.
- The TransLink® Consortium developed the organizational infrastructure to govern the regional program.
- The TransLink® Consortium approved the TransLink® deployment schedule through 2005.

- The policy boards of the Eastern Contra Costa Transit Authority (Tri-Delta) and the Livermore-Amador Valley Transit Authority (LAVTA) approved their participation in the TransLink® project.

Project Funding

The following table provides TransLink® project funding information. This information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which include State Transit Assistance (STA) and Regional Measure 2 (RM 2). RM 2 was approved by voter referendum in March 2004, and was not part of TransLink® funding detailed in the *2003 Project Performance Report*. In all, RM 2 provides about \$48 million to the TransLink® program budget for important capital and operating needs. Some RM 2 operating funds will be used in place of STA operating funds, resolving cash flow issues in the STA Regional Discretionary program and enabling MTC to meet other regional funding commitments. The table includes capital and fixed operating expenses; however, funding from transit operators, which generally cover TransLink®'s variable operating costs, are not included. Significant TransLink® funds (Section 5307, State Transportation Improvement Program and other state and local funds) were obligated prior to FY 2001-02 and also are not included in the funding table. Some of these previously obligated funds were spent on Phase 1 of the TransLink® project; the remaining balance will be spent as the system is deployed in Phase 2.

TransLink®

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03-04	04-05	05-06	06-07	07-08		
STP/CMAQ	\$10,400	\$23,107	\$17,438	\$6,406	\$2,488	\$59,839	52%
Other	1,707	3,905	17,909	18,563	13,055	55,139	48%
Total	\$12,107	\$27,012	\$35,347	\$24,969	\$15,543	\$114,978	

Target Customers

Transit users and transit operators.

"I love the TransLink® program. It's so convenient — I don't have to worry about buying or using ticket books anymore!"
— TransLink® customer

Measuring Performance

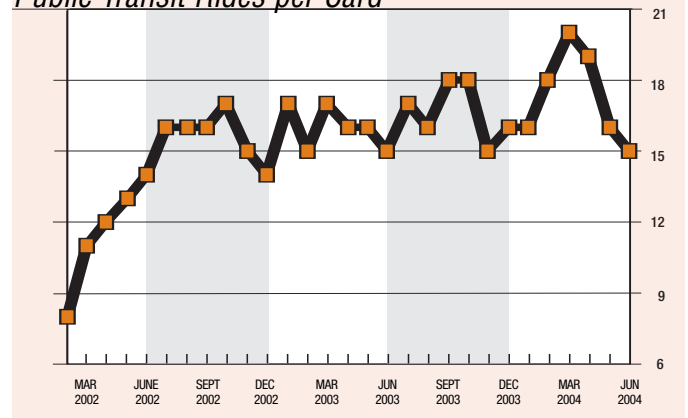
The TransLink® Pilot Program was independently evaluated and received high marks in terms of equipment performance and customer satisfaction. Since then, MTC has continued to track the accuracy, availability and reliability of TransLink® equipment through its own operational data and those collected by the TransLink® contractor and by the participating transit operators. Accuracy is defined as the consistency between transactions recorded on TransLink® field devices, cards and the central processing system. Availability is defined as the amount of time that TransLink® devices are available for use. Reliability is defined as the number of hours between TransLink® device failures. Different TransLink® devices have different performance goals in terms of accuracy, availability and reliability. Payments to the contractor are based in part on a methodology that establishes thresholds for satisfactory, marginal and unsatisfactory performance relative to the accuracy, availability and reliability of TransLink® devices.

Project Performance

Public transit riders originally recruited for the Pilot Program continued to use the TransLink® system in FY 2003–04. Since February 2002, about 6,600 cards have been issued to the public; 4,760 of these cards have been used at least once. An average TransLink® cardholder uses the card to pay for about 17 public transit rides a month (see Figure 1). In all, TransLink® has supported 600,181 fare payment and add-value transactions since February 2002 (see Figure 2). In

figure 1

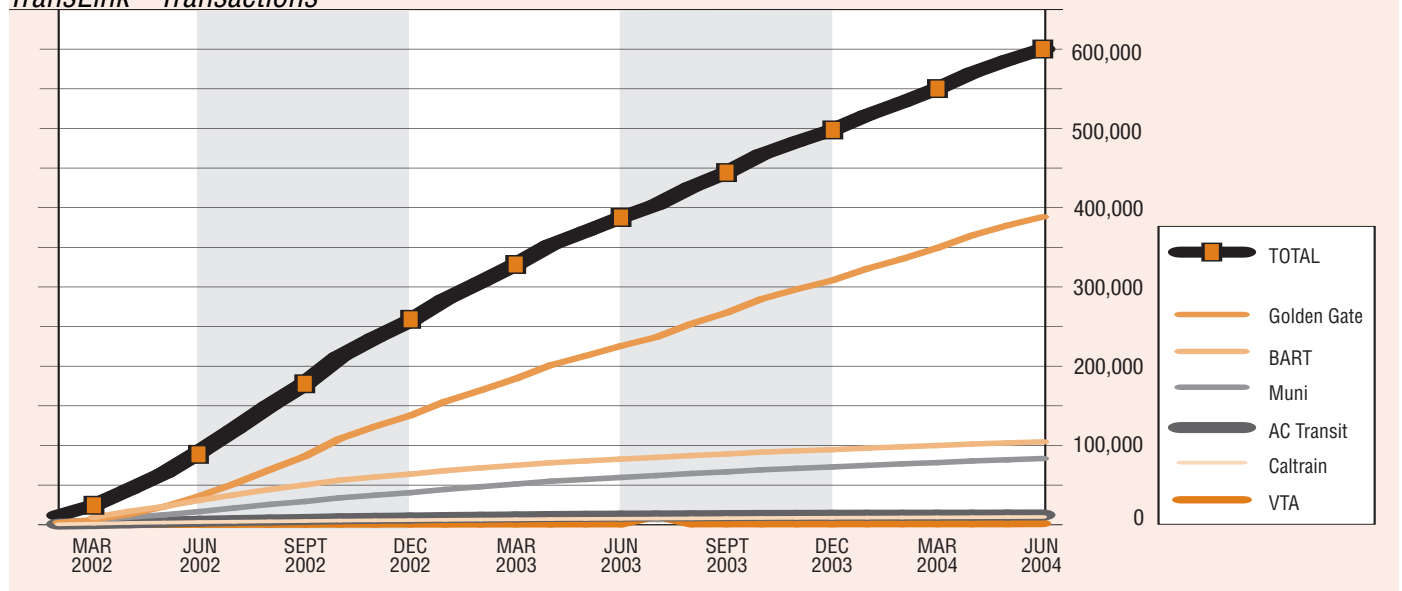
TransLink®: Average Number of Public Transit Rides per Card



terms of overall usage, the number of TransLink® card transactions dropped to 212,534 in FY 2003–04, 28 percent below the 295,957 transactions recorded in the previous year. The decrease in usage is most likely related to the limited deployment of the pilot system in the region and attrition in the ranks of public transit riders recruited for the Pilot Program. Of all transactions since program inception, 65 percent were made on Golden Gate Ferry (the only fleet that is fully equipped with TransLink®), 17 percent occurred on BART and 14 percent on Muni. AC Transit, Caltrain and VTA each had less than 2 percent of total fare payment and add-value transactions. The non-ferry transit operators have very limited TransLink® installations on select routes or stations, which explains their much smaller transaction share.

figure 2

*TransLink® Transactions**



* Cumulative rides and "loads" (value added)

Operationally, TransLink® equipment performed above contractual requirements for accuracy, availability and reliability for the duration of FY 2003–04. When performance dipped below contractual requirements (which was generally for very limited periods of time), it was still near the required performance thresholds. The in-station machines that cardholders use to add value to their cards (add-value machines or AVMs) performed the least satisfactorily compared to contract requirements, and their performance was below other types of TransLink® equipment. Figure 3 shows performance relative to the accuracy, availability and reliability requirements in the contract, which are 99.73 percent for accuracy and availability and 7,500 mean operating hours between failures for reliability.

- AVM accuracy was below the contract requirement for two-thirds of FY 2003–04. In spring 2004, AVM accuracy was 100 percent; however, in June 2004, only 86 percent of transactions were accurately processed by AVMs.
- AVM availability was near or exceeded the contract requirement, and did not fall below 95 percent.
- AVM reliability was below the contract requirement for all of FY 2003–04, and generally worsened throughout the year. There were two main problems affecting reliability. First, AVMs sometimes failed to complete the nightly reset process. Second, AVMs occasionally froze while in idle mode, rendering them unavailable for patron use. The contractor detects these failures remotely and brings the devices back into service immediately, resulting in only minor impacts to AVM availability.

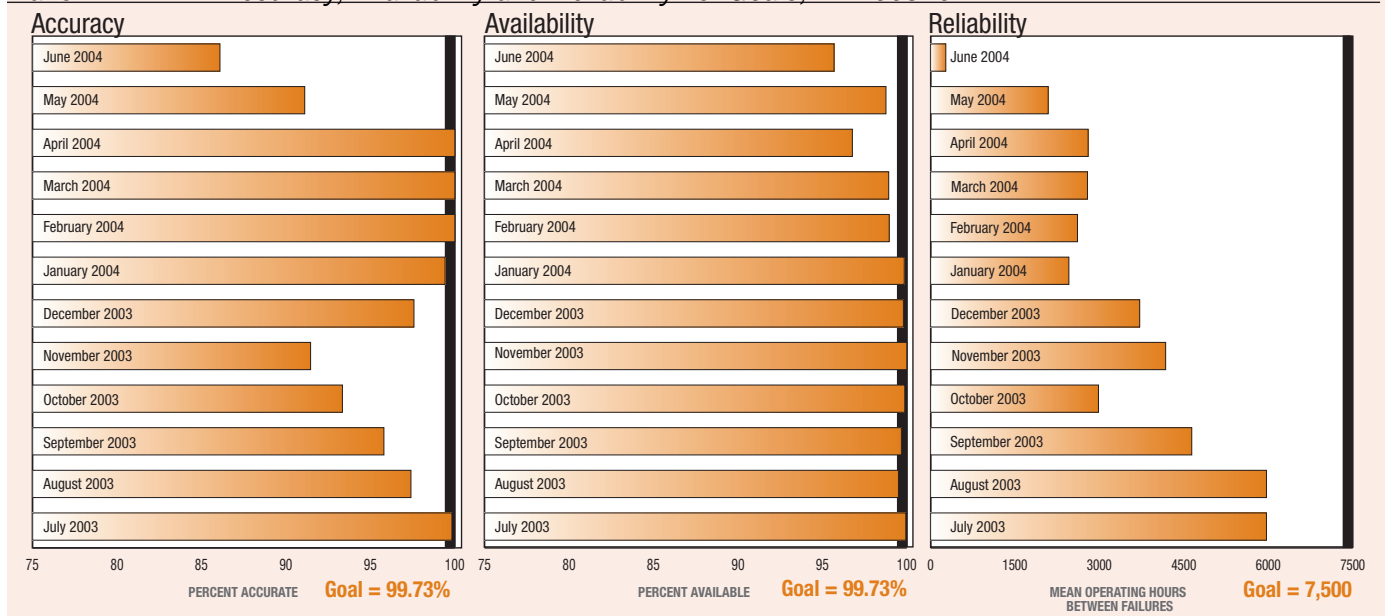
Accuracy, availability and reliability are interrelated, so MTC expects performance to improve across the board as the TransLink® contractor tackles various software and equipment issues. In the meantime, the contractor continues to rectify add-value and fare payment transaction issues resulting in no revenue loss to any transit operator. MTC perceives the impact to transit riders to be minimal since there were no incidences of patrons calling the TransLink® Service Bureau or MTC to report unavailable devices.

In FY 2003–04, the following steps were taken to advance the TransLink® project:

- MTC issued a ‘notice to proceed’ (NTP) to Motorola/ERG for Phase 2 of the TransLink® project on November 10, 2003.
- Six transit operators (AC Transit, BART, Golden Gate, Muni, SamTrans and VTA) and MTC executed the TransLink® Interagency Participation Agreement. The agreement establishes the TransLink® Consortium as the joint agency decision-making body for operation of TransLink®, lays out specifics on how the Consortium is to conduct business and specifies the formula for sharing TransLink® operating costs.
- The boards of directors of the Eastern Contra Costa Transit Authority (Tri-Delta) and the Livermore-Amador Valley Transit Authority (LAVTA) approved their participation in the TransLink® project.

figure 3

TransLink® AVM Accuracy, Availability and Reliability vs. Goals, FY 2003–04



- Consortium members assumed leadership roles in implementing the TransLink® project. Three committees were created to address important scope, schedule and budget issues. The groups met on a regular basis to address issues such as adopting a deployment schedule, finalizing the TransLink® operating rules (the program policies that govern how TransLink® is implemented regionally), approving the TransLink® operating and capital budgets and developing individual operator marketing plans to promote the card to transit riders. These committees report to an oversight group (the TransLink® Operations Group) and a decision-making body (the TransLink® Management Group), which guide TransLink® implementation on behalf of the Consortium.

figure 4

<i>TransLink® Deployment Schedule</i>	
Transit Operator	Deployment Date
Golden Gate Transit	Fall 2005
AC Transit	Fall 2005
BART	Spring 2006
Muni	Spring 2006
Caltrain	Winter 2006
VTA	TBD

- The Consortium approved final design of a process for settlement of TransLink® transactions, funds movement and funds tracking.
- Five of the six transit operators finalized a deployment schedule for the TransLink® system (see Figure 4). Work is under way to complete VTA's schedule. After TransLink® is deployed on these transit systems, it will be deployed on the balance of transit operators in the region.
- BART and Muni initiated faregate integration efforts with the TransLink® contractor. The work will allow TransLink® software to operate seamlessly with the agencies' existing fare collection equipment to process fare payment transactions.
- The contractor upgraded the TransLink® equipment and smart cards to make them ISO-compliant. The contractor also improved the system's ability to process transactions in a high-volume environment. The TransLink® system is the first in the world to remotely upgrade card software. This is a significant technological achievement because it

allows for software upgrades to cards already in circulation without requiring that the cards be replaced, minimizing inconvenience for the cardholder.

Future Expectations

The TransLink® Consortium is striving to make TransLink® available to the general public as soon as possible. MTC looks forward to 2005 as the year TransLink® begins regional deployment on AC Transit and Golden Gate Transit.

To make the initial deployment a success, MTC, the transit operators and the TransLink® contractor must accomplish the following:

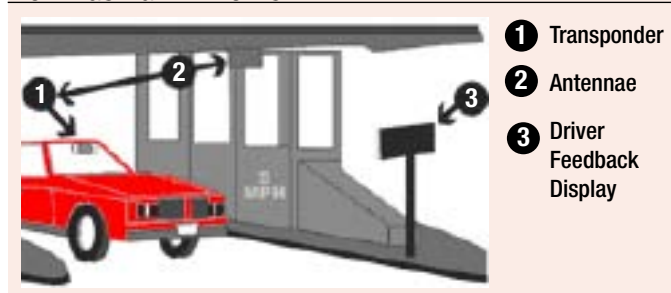
- MTC will enter into funding agreements with individual transit operators to complete site preparation for TransLink® equipment installation.
- MTC will work closely with the contractor and transit operators to finalize the placement of in-vehicle equipment.
- The Consortium will develop and approve a final set of operating rules for Phase 2. The operating rules define transit operator, contractor and MTC roles and responsibilities.
- The Consortium will finalize policies concerning the investment of revenue generated from the TransLink® "float" account. Float is idle money that occurs as a result of the delay between when a TransLink® customer adds and spends value on his or her TransLink® card.
- MTC will coordinate with the contractor to identify and resolve all software and equipment issues to ensure that equipment performance improves and consistently meets minimum contract requirements for reliability, availability and accuracy. With respect to AVM performance, the contractor implemented a software upgrade in November 2004.
- The contractor will develop a Distribution Management Plan which will describe how the contractor will meet its obligations concerning the distribution of TransLink® cards and add-value locations. The contract requires a network of 400 third-party distribution locations in the Bay Area.
- The Consortium will develop a regional marketing plan for TransLink® as well as individual transit operator marketing plans.

FasTrak™: Electronic Toll Collection

FasTrak™ is the Bay Area's electronic toll collection (ETC) system for Bay Area bridges. FasTrak™ makes paying tolls convenient and speeds traffic throughput at toll plazas. Caltrans estimates throughput at a single toll booth to be 1,200 vehicles per hour with FasTrak™ compared to 400 vehicles per hour with cash. A motorist who signs up for FasTrak™ first establishes a prepaid account to pay for toll transactions. The motorist receives a credit-card-sized transponder, which is to be mounted on the inside of the windshield of the motorist's vehicle. The transponder is linked to the motorist's FasTrak™ account. Tolls are automatically deducted from the prepaid toll balance when the motorist drives through a FasTrak™-equipped toll lane. (See Figure 1.) When the account reaches a minimum threshold amount, it is either automatically replenished by charging the motorist's credit card, or the motorist can add value by cash or check.

figure 1

How FasTrak™ Works



The FasTrak™ Customer Service Center (CSC) is responsible for the day-to-day operations of the FasTrak™ program. The services provided through the CSC include customer account management, revenue and payment processing, reciprocal payment and transaction processing with other toll operators, Web services, call center functions, violation enforcement and payment processing, and transponder issuance.

The FasTrak™ program is a new responsibility for MTC, acting in its capacity as the Bay Area Toll Authority (BATA). BATA was created by the California Legislature to administer the base toll revenues generated by the Bay Area's seven state-owned toll bridges. In July 2003, BATA and Caltrans entered into an agreement for BATA to assume responsibility for procuring ETC services for these bridges. In August 2003, BATA and the Golden Gate Bridge, Highway and Transportation District (GGBHTD), which separately owns, operates and administers

toll revenues for the Golden Gate Bridge, entered into an agreement for BATA to engage a single contractor to provide ETC services on all Bay Area bridges.

BATA has a five-year contract with ACS State and Local Solutions, Inc. to design, build, operate and maintain the regional FasTrak™ CSC to administer ETC services on the Bay Area's eight toll bridges. The contract includes an option to renew for up to two two-year periods.

Project Objectives

- Provide motorists with a convenient, fast and reliable way to pay bridge tolls.
- Increase the use of electronic toll collection by travelers using the bridges.
- Improve customer service and expand service capabilities for electronic toll collection customers.
- Reduce BATA and partner agency costs through consolidation of service operations.

Highlights

- BATA adopted a \$1 discount on tolls for FasTrak™ users for four months beginning July 1, 2004 as an incentive for motorists to sign up for FasTrak™.
- A major marketing campaign to promote FasTrak™ and the promotional discount was implemented to encourage enrollment.
- Average enrollment in FasTrak™ surged from approximately 1,350 applications per week in April to 9,400 applications per week in July. Between April 1 and September 30, 78,600 new FasTrak™ accounts were opened for a total of 287,500 accounts, a 36 percent increase in the number of FasTrak™ accounts.
- FasTrak™ usage on state toll bridges during peak commute periods increased slightly from 28 percent of travelers in the first quarter (July to September 2003) of FY 2003–04 to 30 percent in the fourth quarter (April to June 2004). Preliminary data for the first quarter of FY 2004–05 indicates that 38 percent of travelers used FasTrak™ on state toll bridges during the peak commute.
- Caltrans opened an additional FasTrak™-only lane at both the San Francisco-Oakland Bay Bridge and the Carquinez Bridge toll plazas.

FasTrak™

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03-04	04-05	05-06	06-07	07-08		
STP/CMAQ	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0%
Other	10,000	6,900	12,100	9,000	9,900	47,900	100%
Total	\$10,000	\$6,900	\$12,100	\$9,000	\$9,900	\$47,900	

On a monthly basis, BATA collects data to determine the effectiveness of BATA's marketing efforts and success at increasing FasTrak™ use in the region. BATA tracks the number of FasTrak™ applications received and accounts opened by the CSC. BATA also tracks the FasTrak™ market share against total traffic from data collect-

ed by the in-lane toll collection system and through revenue reports provided by Caltrans. For each bridge, BATA tracks average daily and peak-period FasTrak™ usage. This information is also used by Caltrans and BATA to determine when cash toll lanes can be converted to FasTrak™-only toll lanes without creating unacceptable traffic backups at the toll plazas.

Project Funding

The FasTrak™ project is 100 percent funded by bridge toll revenues. No regional STP/CMAQ funds are committed to this project in Transportation 2030.

Target Customers

Motorists who cross one or more of the eight Bay Area toll bridges at least once a month.

Measuring Performance

BATA uses several measures to determine if FasTrak™ performance is meeting the project goals.

BATA measures contractor performance to ensure that satisfactory customer service is provided. In order to ensure that the contractor meets a minimum level of service for CSC operations, a schedule of 21 performance standards and price adjustments has been established for the contract. The performance measures address key contractor responsibilities in the areas of FasTrak™ account management, toll violation image review and notification, and CSC system maintenance. Examples of performance measures and standards are:

- 80 percent of monthly customer calls to the CSC must be answered within 1 minute; 95 percent of monthly customer calls must be answered within 3 minutes.
- Transponders must be mailed out within 7 business days of receipt of a FasTrak™ account application.
- 98 percent of violation images must be reviewed within 10 calendar days of when the image was taken.
- License plate data must be entered correctly for 99.75 percent of daily toll violation images reviewed.

The contractor provides reports to BATA that summarize performance relative to established standards. Performance information for the FasTrak™ contractor dates from April 1, 2004 when BATA assumed responsibility for the CSC contract.

Project Performance

BATA approved a \$1 discount on tolls for FasTrak™ users for four months beginning July 1, 2004 as an incentive for motorists to sign up for FasTrak™. The incentive was implemented at the same time that bridge tolls on the seven state-owned bridges increased by \$1 as a result of the passage of Regional Measure 2. BATA developed a campaign to promote the \$1 discount and encourage motorists to sign up for FasTrak™, and conducted a survey to help refine the campaign message and target audience. BATA staff and contractors completed the following activities to promote enrollment:

- Distributed 200,000 brochures through Caltrans toll collectors, the California State Automobile Association, and the Department of Motor Vehicles
- Aired radio spots and traffic sponsorships
- Displayed banners at toll plazas
- Worked with the media to educate reporters about the toll increase, the promotional discount and the FasTrak™ program

From April through July 2004, 73,600 applications for FasTrak™ accounts were received at the CSC (see Figure 2). For this same time period, the contractor opened 60,600 FasTrak™ accounts. The contractor performed satisfactorily in April and May 2004. During the months of June and July, there was degradation in performance due to the significant increase in FasTrak™ applications received during the promotional discount period. The number of weekly applications for FasTrak™ transponders spiked at about 19,000 at the end of June 2004 with the transition to the higher toll and \$1 toll

figure 2

FasTrak™ Applications Received, by Week, April – July 2004 (Total Applications = 73,600)

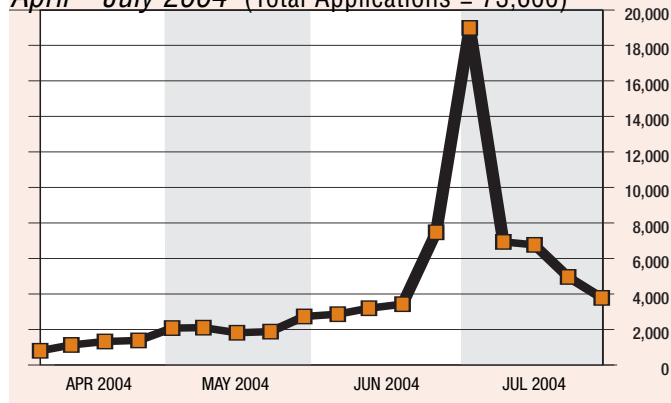
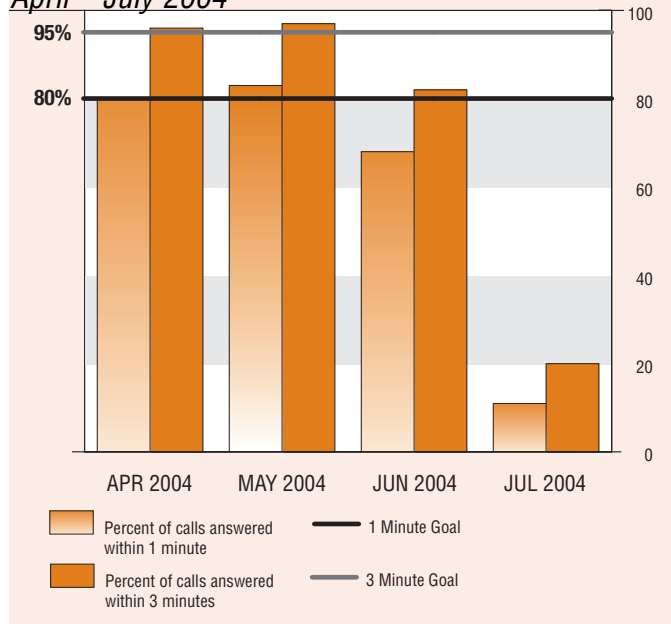


figure 3

Call Answering: FasTrak™ Customer Service Center, April – July 2004



discount, an 800 percent increase over levels at the beginning of April. During the month of July 2004, processing of FasTrak™ applications and distribution of FasTrak™ transponders lagged behind contract requirements.

The contractor also experienced difficulty meeting the monthly call answering standards in June and July 2004 (see Figure 3). The contractor did not return to compliance with call answering standards until late September 2004 as call volumes returned to normal levels. The contractor is assessing the feasibility of using one of its non-Bay Area call centers to answer overflow calls from the CSC to support enrollment surges due to future marketing efforts.

Several measures were taken in FY 2003–04 to improve customer service:

- The contractor provided Web capabilities to allow customers to apply for a FasTrak™ transponder online.
- MTC improved visibility of FasTrak™ by prominently placing a promotion on the 511.org Web portal and including a direct connection to the CSC on the 511 telephone line.

In spring 2004, BATA adopted a Strategic Plan for FasTrak™ that addresses two important areas for achieving higher ETC usage rates on the Bay Area's state-owned bridges: traffic operations and marketing. These areas are discussed in more detail below.

FasTrak™ Market Share

As part of the Strategic Plan, BATA researched ETC usage on toll bridges in several other comparable metropolitan areas in the country (see Figure 4). The research found that peak ETC market share on the Bay Area's state-owned bridges is significantly below the ETC market shares of the other agencies sur-

figure 4

Electronic Toll Collection Systems Comparison, May 2002

	Metropolitan Transit Authority NY	Port Authority NY/NJ	Delaware River Port Authority PA/NJ	BAY AREA	
				Golden Gate Bridge	B.A. State- Owned Bridges
Average Peak Usage	75%	70%	55%	70%	29%
Dedicated ETC Toll Lanes (maximum, as a percent of all lanes)	61%	57%	44%	36%	14%
Toll Rates (two-axle vehicles)					
Cash	\$3.00	\$6.00	\$3.00	\$5.00	\$2.00
ETC	\$2.70	\$5.00	\$2.70	\$4.00	\$2.00

figure 5

FasTrak™ Usage Rates on State-Owned Bridges in the Bay Area, FY 2003–04

	Total Toll-Paying Vehicles	FasTrak™ Vehicles	Percent FasTrak™	Percent FasTrak™ (Peak Hours Only)
July – Sept. 2003	32,287,250	7,022,710	21.8%	28.3%
Sept. – Dec. 2003	30,765,168	7,243,598	23.5%	29.3%
Jan. – Mar. 2004	30,161,225	7,383,330	24.5%	30.4%
Mar. – Jun. 2004	31,528,889	7,697,587	24.4%	30.9%

Figure 6

*FasTrak™ Lane Information**(All toll bridges except Golden Gate)*

Bridge	Number of FasTrak™-only Lanes	Total Lanes	FasTrak™-only Lanes as % of Total Lanes
Antioch	1	3	33%
Benicia-Martinez	1	9	11%
Carquinez	2	12	17%
Dumbarton	2	7	29%
Richmond-San Rafael	1	7	14%
Bay Bridge	2	22	9%
San Mateo-Hayward	2	10	20%
Total	11	70	16%

veyed. The research also showed that the Bay Area's state-owned bridges have the lowest utilization of dedicated ETC lanes, the lowest toll rates and no permanent discounts for using ETC as opposed to cash when paying tolls. Taken together, these findings suggest a clear opportunity for growth in ETC use on Bay Area state-owned bridges. In FY 2003–04, FasTrak™ usage on Bay Area state-owned bridges increased a modest amount (see Figure 5).

While Caltrans is responsible for traffic operations on the Bay Area's state-owned toll bridges, BATA plays an increasingly important advisory role. BATA worked with Caltrans to develop a plan to convert existing FasTrak™/cash toll lanes to dedicated FasTrak™ -only toll lanes. The Bay Bridge and Carquinez Bridge added FasTrak™ -only lanes in FY 2003–04; more FasTrak™ only lanes are planned for FY 2004–05 on other bridges. A snapshot of toll lane information is depicted in Figure 6. Caltrans and BATA are assessing traffic conditions to determine the date when additional FasTrak™-only lanes will open.

Future Expectations

In FY 2004–05, BATA expects to implement several improvements in the areas of FasTrak™ customer service, traffic operations and marketing. These include:

- New customer service center — The contractor will implement a new Regional CSC in San Francisco to replace the separate Caltrans and GGBHTD customer service centers. From this location, all FasTrak™ accounts will be managed.
- ETC software upgrade — The existing ETC software, which the contractor inherited from Caltrans, will be replaced in order to accommodate the Regional CSC. The new software will enable better processing capabilities and improved service for FasTrak™ customers. It also will offer expanded Web services, including online account management and payment processing.
- Customer satisfaction survey — A survey of FasTrak™ customers will be conducted to assess their experience with the FasTrak™ program. Survey results are expected to inform product, customer service and marketing improvements.
- Marketing — BATA will continue to market FasTrak™ to expand usage. BATA is exploring opportunities to increase enrollment by distributing transponders at the toll plazas.
- New dedicated FasTrak™ lanes — Consistent with BATA's Strategic Plan, additional dedicated FasTrak™ toll lanes will open as FasTrak™ usage increases.

“It's a simple tool that is making important little changes in our lives, like saving time and money. It's like waving a magic wand.”
— FasTrak™ customer

PROJECT PERFORMANCE REPORT

511 TRAVELER INFORMATION PROGRAM

511 Traveler Information Program

Providing the public with information about Bay Area travel choices is a key strategy in the continuing challenge to reduce the impact traffic congestion has on people's lives. The 511 Traveler Information Program is the culmination of years of effort by MTC, Caltrans, the California Highway Patrol (CHP), transit operators and other partners to provide on-demand, real-time information. The 511 program offers free traveler information available by telephone via the federally dedicated information number and on a Web site at 511.org. Information is organized by mode: traffic, transit, ridesharing and bicycling. This innovative service seeks to:

- Empower customers to make informed travel decisions
- Expose customers to a range of transportation options
- Inspire customer confidence in the reliability of the transportation system

Technological Advances

The 511 service represents the convergence of several important opportunities:

- The Federal Communications Commission recognized the importance of implementing a national three-digit telephone number for transportation information.
- Voice-response and other technologies have improved significantly.
- Consumer access to cell phones, computers, personal digital assistants and the Internet continues to grow.
- Consumers are increasingly technology savvy and have high expectations that products and services be user-friendly.
- MTC recognizes the importance of investing transportation funds to improve the ease and convenience of using the transportation system.

"THANK YOU SOOO MUCH for this much needed service. I use both the phone service and Web site to check traffic conditions, to take the bus and BART, to see how to get somewhere and look up carpool resources. I wish all communities had such a resource!!!!"

— 511 customer

Customer Focus

The 511 program places a priority on the customer's experience with its service. To this end, customer feedback is sought through focus groups, surveys, comment lines and other methods. New 511 features are based on customer feedback and designed to meet the needs of customers within budgetary, technological and institutional constraints. MTC implements promotional campaigns and uses available assets (e.g., blue-and-white highway signs) to increase consumer awareness and use of 511.

The 511 Web portal serves as a gateway to the traffic, transit, ridesharing and bicycling Internet-based service. MTC tracks usage of the portal to better understand 511 customer needs. Based on customer feedback, MTC launched a redesigned Web portal page in February 2004. The redesign allows better use of the portal as a tool for highlighting 511 features and regional transportation tools. The redesign allowed MTC to prominently promote special services like TransLink® and FasTrak™ and to more effectively promote events like Rideshare Thursdays and Spare-the-Air days.

Projects Supporting 511

While 511 is presented as a single service to the customer, it is composed of a suite of projects managed and integrated by MTC. The *2004 Project Performance Report* organizes the performance discussion according to the following 511 component projects:

- TravInfo®
- Regional Rideshare Program
- Regional Transit Information System

As part of MTC's ongoing efforts to operate more efficiently, the project managers for these three contracts began in FY 2003–04 to explore alternative procurement strategies for gathering traffic, transit, rideshare and bicycle information and disseminating the information via the 511 phone number and 511.org Web site. In spring 2005, MTC plans to hire a technical advisor for the 511 program and other Intelligent Transportation Systems (ITS) projects. One of the new technical advisor's responsibilities will be to help develop procurement strategy recommendations.

511 — TravInfo®

TravInfo® collects real-time transportation data from various sources in the Bay Area, and provides the public with accurate, comprehensive and timely information about traffic congestion, driving times, roadway incidents, construction activity and special events through the 511 traveler information phone number and the 511.org Web site. TravInfo® information also is disseminated through other channels, such as local radio stations, traffic reports on television and Web sites run by transportation agencies and private companies. Data for the TravInfo® system comes from MTC, the CHP, Caltrans and other Bay Area transportation agencies.

The TravInfo® contractor, PB Farradyne, has a six-year (2000–2006) design-build-operate-maintain contract with MTC to collect, fuse and disseminate TravInfo® data, and to provide marketing services. In addition to operating the TravInfo® system, PB Farradyne is responsible for developing system enhancements.

Highlights

In FY 2003–04, TravInfo®:

- Introduced to the public the new 511 Driving TimesSM feature, which gives point-to-point freeway travel times
- Launched a new traffic Web site (traffic.511.org) with all the functionality of the traffic option on the 511 phone system (i.e. driving times, traffic conditions, etc.)
- Enhanced the voice-response system on the 511 phone system to make it more user-friendly
- Surpassed the 1 million, 2 million and 3 million calls thresholds

The 511 traveler information service was also honored with four awards which reflect national public transit and Intelligent Transportation Systems (ITS) industry recognition of the project, including:

- The American Public Transit Association gave 511 its ‘Innovation’ award for “demonstrating innovative concepts in the provision of public transportation services.”
- The California Alliance for Advanced Transportation Systems lauded 511 with the ‘Best Public Innovation’ and ‘Best Partnership’ awards.

- ITS America bestowed its highly regarded ‘Best New Product, Service or Application’ award on 511 for a “new ITS product, service or application that exhibits the greatest innovation and benefit.”

Project Objective

To provide comprehensive, accurate, reliable and useful multimodal travel information that meets the needs of Bay Area travelers.

Project Funding

The following table provides TravInfo® project funding information. This information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which in the case of TravInfo® are entirely comprised of MTC Service Authority for Freeways and Expressways (SAFE) funds. These SAFE funds serve as the local match to federal moneys.

TravInfo®

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03–04	04–05	05–06	06–07	07–08		
STP/CMAQ	\$6,000	\$5,146	\$2,828	\$7,230	\$7,108	\$28,312	87%
Other	927	927	357	941	896	4,048	13%
Total	\$6,927	\$6,073	\$3,185	\$8,171	\$8,004	\$32,360	

Target Customers

The primary target customers for TravInfo® are users of any of the region’s transportation modes. Secondary customers include transportation agencies, which can use the information to fill in gaps in the data that they get from their own systems, and private-sector Information Service Providers (ISPs), which disseminate this information to travelers through their own customized products and services.

Measuring Performance

Through FY 2003–04, the most important measures of the program’s performance have been the number of people using 511 and the users’ satisfaction with the service. The rationale for focusing on usage and satisfaction has been that there is no better way to determine if the product meets the needs of the traveling public. If people are not satisfied with TravInfo®’s performance, they will stop using the 511 system.

“The new traffic section of your Web site is awesome!!! The more I played around with it, the better it got — I love that you can check specific driving times.”

— 511 customer

The contract with PB Farradyne, therefore, provides an incentive fee worth up to 8 percent of project costs that is awarded solely on the basis of achieving certain levels of system usage and customer satisfaction. This incentive fee is in addition to the contractor’s fixed fee of 6 percent of project costs. PB Farradyne generates monthly reports of system usage, and an independent contractor, working closely with PB Farradyne and MTC, tracks customer satisfaction.

For FY 2004–05, MTC has negotiated a change in the incentive fee with PB Farradyne. This change is designed to encourage the contractor also to pay attention to system reliability issues. The incentive fee worth up to 8 percent of project costs will be awarded on the basis of achieving certain levels of system usage and system reliability (instead of customer satisfaction).

In order to ensure the quality of the product, MTC monitors the accuracy, reliability, timeliness and comprehensiveness of the data being provided to the public and the performance of the three underlying systems that make up TravInfo®: data collection, data fusion and data dissemination. MTC has identified system failures that can occur for each system. Generally, failures are those that prevent the transmission of data from one system to another or to the customer. For example, a major data fusion failure prevents the transmission of incident information to the 511 phone and Web systems.

MTC’s contract with PB Farradyne includes specific numerical criteria for assessing system reliability and data accuracy. Some examples are the following:

- The data fusion and data dissemination systems must each have a mean time between failures (MTBF) greater than 1,200 hours.
- Incident data must be posted within 1 minute of verification of the incident. The verification process must be completed within 5 minutes of the first received report of the incident 90 percent of the time. Incidents must be updated within 3 minutes of confirmation of change of status.

- Driving time reports must be accurate within 1 minute or 15 percent of total driving time (whichever is greater) compared to actual traffic times.

Finally, MTC conducts periodic focus groups or surveys to gauge how to improve the services, and to get more detailed information about the users’ experiences and satisfaction levels.

Project Performance

MTC is ramping up its monitoring efforts with respect to performance measures specified in the PB Farradyne contract. Since the March 2004 launch of the enhanced 511 traveler information service with 511 Driving TimesSM, MTBF measures for data collection, data fusion and data dissemination as well as other statistics have been tracked more formally.

Figure 1 shows that 13 system failures took place in the five weeks following the launch of the enhanced 511 system. These resulted in a total downtime of 30 hours. During this time, MTC was still refining the 511 system and increasing system capacity, which contributed to the higher than anticipated number of failures. In response, MTC implemented a system reliability database to track failures. By documenting problem causes and their resolutions, the database helps build an “institutional memory,” and helps 511 system operators to take the steps necessary to avoid recurrence of problems. Of the 30 failures that occurred through the end of September, 79 percent occurred before July 2004, revealing a slowdown in the failure rate in the first quarter of FY 2004–05.

For the period from late March through September 2004, MTBF for data collection was 2,280 hours, which significantly exceeds the contract requirement of 1,200 hours. Data fusion experienced no failures, resulting in an effective MTBF of

figure 1

511 System Failures, March – September 2004

Month	Number of Failures
March*	5
April	8
May	5
June	5
July	2
August	5
September	0

* Tracking of failures began in March 2004 with launch of the enhanced 511 system.

4,560 hours. Data dissemination performed significantly below the contract requirement with a MTBF of 161 hours. MTC has created a new incentive structure for FY 2004–05 that should focus PB Farradyne on improving the reliability of data dissemination through 511.

Data Collection

MTC completed installation of the first phase of the FasTrak™ toll-tag reader program in early FY 2003–04. (See page 19 for a description of the FasTrak™ program.) Coupled with Caltrans' existing freeway loop detectors, the FasTrak™ toll-tag system enables reporting of traffic slowdowns, freeway congestion and point-to-point travel times on portions of the freeway network. 511 Driving TimesSM was introduced for public use in March 2004 and is the first 511 service in the country to provide point-to-point travel times. Phase 1 coverage included portions of Interstate 80, 680 and 880. (See map titled "511 Driving TimesSM: Current Freeway Coverage.") The Driving Times launch was covered by every major newspaper and television network in the region.

During the months of April through September, MTC conducted a total of 165 "maintenance runs" designed to compare

actual point-to-point travel times (gathered by a test vehicle) to 511 Driving TimesSM information reported through 511. On 75 percent of the trips covered by these runs, travel time information provided through 511 Driving TimesSM met the contract requirement of accuracy within 1 minute. MTC also found that 511 Driving TimesSM information was accurate within 5 minutes on 92 percent of the trips.

Data Dissemination

TravInfo®'s primary methods of disseminating information in FY 2003–04 included the 511 phone system and information service providers (ISPs.) An enhanced version of the 511 phone system software was launched in March 2004, in addition to 511 Driving TimesSM features. The 511 system enhancements include:

- Additional information on traffic slowdowns (including actual traffic speeds when traffic is moving under 40 miles per hour)
- More detailed information about the location of accidents, stalls and other traffic incidents
- An upgraded voice response system that is easier to navigate and has a quicker response time
- A new option to allow callers to be transferred to the FasTrak™ customer service center

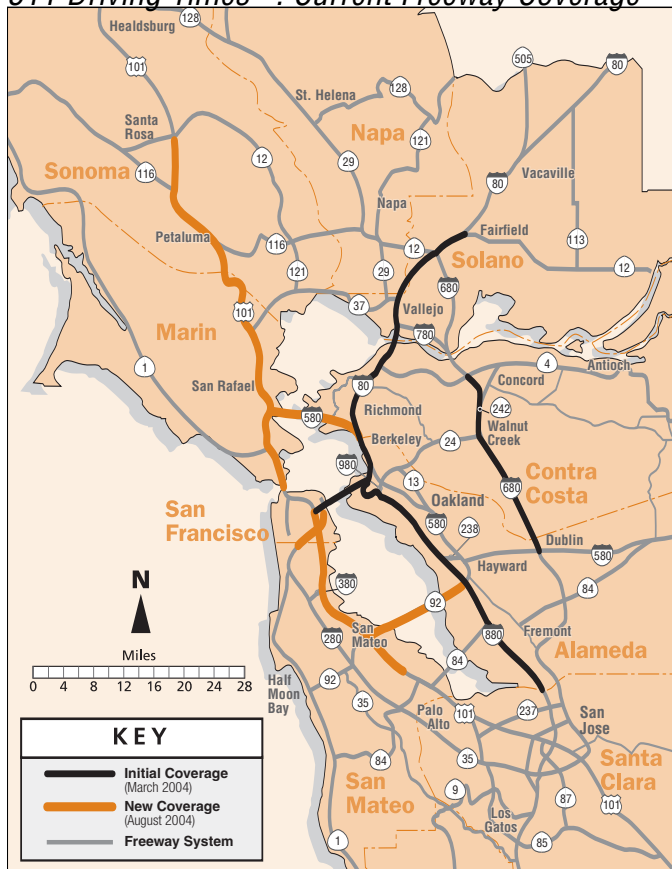
MTC also launched a traffic information Web site (traffic.511.org) through the 511.org Web portal in March 2004. The premier feature of the traffic Web site is an interactive map and a set of tools to calculate personalized driving times and get up-to-the-minute information on congestion, roadwork and accidents. The Web site also provides all of the above information in tabular format, which is valuable for people with visual impairments.

Usage: Phone and Web

Overall, use of the 511 traveler information phone service increased 207 percent between FY 2002–03 and FY 2003–04. Requests for traffic information surged by 409 percent while transit information requests grew 64 percent for this same time period. Requests for rideshare information grew 172 percent while requests for bicycling information grew 141 percent.

Usage has steadily increased since 511 replaced the 817-1717 traveler information number in December 2002. Figure 2 shows the quarterly call volumes for the traffic and transit components of the 511 phone service before and after the 511 launch.

511 Driving TimesSM: Current Freeway Coverage



A variety of factors contributed to continued growth in 511 phone usage (especially for traffic information), including the following:

- 511 is easier for callers to dial and remember than 817-1717, and the voice-responsive system is much easier to use than the touch-tone system that it replaced.
- The enhanced 511 traffic service including 511 Driving TimesSM was introduced in March 2004.
- A series of marketing and public relations efforts were undertaken to target travelers most likely to use 511 on a regular basis.

PB Farradyne extensively promoted the 511 traffic service at its introduction in March 2004. The marketing effort resulted in considerable print and broadcast media coverage, including 26 print stories and 23 broadcast media stories. Average monthly traffic information requests were approximately 94 percent higher for the four months after the news coverage (including March 2004) than for the eight months prior. Apart from this targeted marketing activity, the increase can also be attributed to: a general awareness campaign (featuring billboards and street banners) from June 2003 through August 2003; CHP public service announcements on television from June 2003 through December 2003; and an outdoor campaign promoting the 511 phone service from December 2003 through April 2004.

Figure 3 presents information about usage of the 511 traffic Web site since its debut in March 2004.

In addition to providing information through 511, the TravInfo[®] contractor has agreements with private companies to permit use of TravInfo[®] traffic data as content for their Web sites. Web use of traffic information through TravInfo[®] ISPs increased to 5.2 million requests for information in FY 2003–04, up 271 percent from 1.4 million user sessions in FY 2002–03.

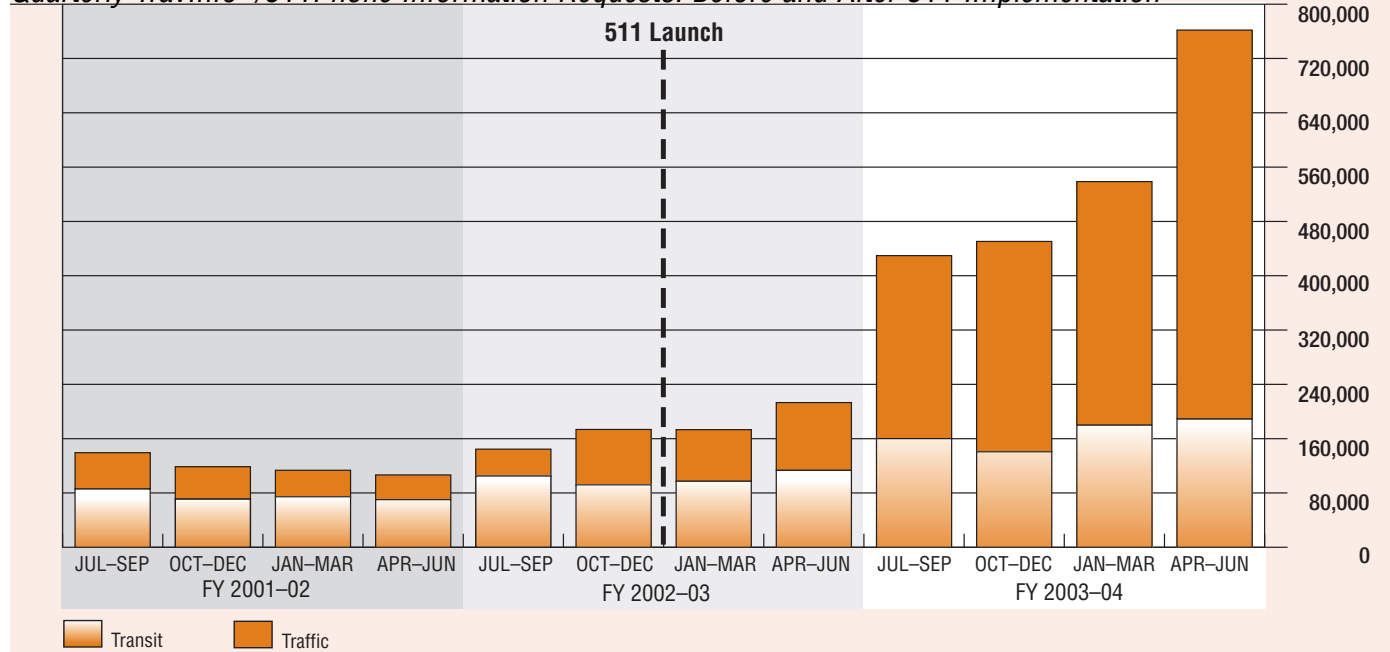
Including all dissemination methods, TravInfo[®] had 6,929,525 traffic information requests and 669,369 transit information requests in FY 2003–04 (see Figure 4). While the overall usage of TravInfo[®] services increased in FY 2003–04, especially traffic usage, performance remains below the usage goals established in the TravInfo[®] contract. Traffic usage was 79 percent of the FY 2003–04 goal and transit usage was 45 percent of the FY 2003–04 goal, compared to 30 percent and 41 percent respectively in FY 2002–03.

Customer Satisfaction

In May 2004, MTC surveyed 1,001 users of the 511 telephone information service to determine their level of satisfaction with the service (see Figure 5). The survey found that 92 percent of respondents were satisfied with the system (70 percent “very satisfied,” 22 percent “somewhat satisfied”). Respondents were generally satisfied because they got the information they needed, and found the 511 system to be accurate, quick and easy to use. Of traffic information seekers (417 total), 40 percent were unaware of the new 511 Driving TimesSM feature, indicating a need for additional marketing. 93 percent of all respondents

figure 2

Quarterly TravInfo[®]/511 Phone Information Requests: Before and After 511 Implementation



indicated they were “very likely” to call 511 again. When asked to think about their most recent call to 511, 36 percent of respondents reported that the information they received through 511 caused them to change their travel plans or actions. The 2004 survey results were in line with the findings of a similar survey done a year earlier. MTC does not plan to conduct a customer satisfaction survey in FY 2004–05 given the survey’s positive and consistent findings over the past two years.

Future Expectations

MTC has established the following milestones for TravInfo® in FY 2004–05:

- **511 Driving TimesSM** — MTC expects to continue deployment of the toll-tag readers and to expand the 511 Driving TimesSM service to include all major Bay Area freeways and

bridges. In August 2004, 511 Driving TimesSM coverage was expanded to portions of Interstates 280 and 580 as well as U.S. Highway 101 and Highway 92 (see map on page 27). Complete deployment on all Bay Area freeways is scheduled for late FY 2005–06. Extensive testing of new 511 Driving TimesSM routes will be conducted before disseminating information to the public to assure that travel time estimates meet accuracy requirements.

- **System Reliability** — MTC expects to make several enhancements to 511 in FY 2004–05 that will improve the reliability of incident information and phone system capacity. An interface to the CHP’s Computer-Aided Dispatch system is under development to semi-automate data entry for traffic incident information, which should reduce human error. In addition, a new configuration, additional phone lines and computer equipment will be added to make the 511 system more reliable.
- **Highway Signage** — MTC will have doubled the number of 511 highway signs by the end of 2004.
- **Marketing Campaigns** — MTC conducted a major radio campaign in the fall 2004 to promote the enhanced 511 traffic service. MTC also will promote 511 on the Web by encouraging other transportation Web sites to provide links to 511.org and through online advertising campaigns.
- **Usage Goals** — FY 2004–05 usage goals (including all dissemination methods) for TravInfo® are 987,116 transit users and 9,734,194 traffic users.
- **TravInfo® Procurement** — MTC will decide whether to exercise its option to extend the PB Farradyne contract two years or rebid the contract.

figure 3

Monthly 511 Traffic Web User Sessions

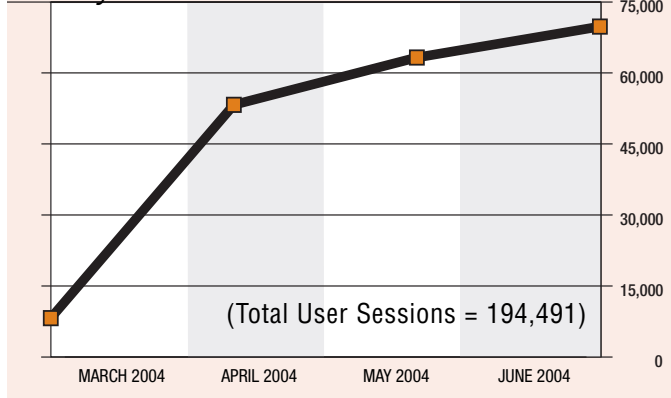
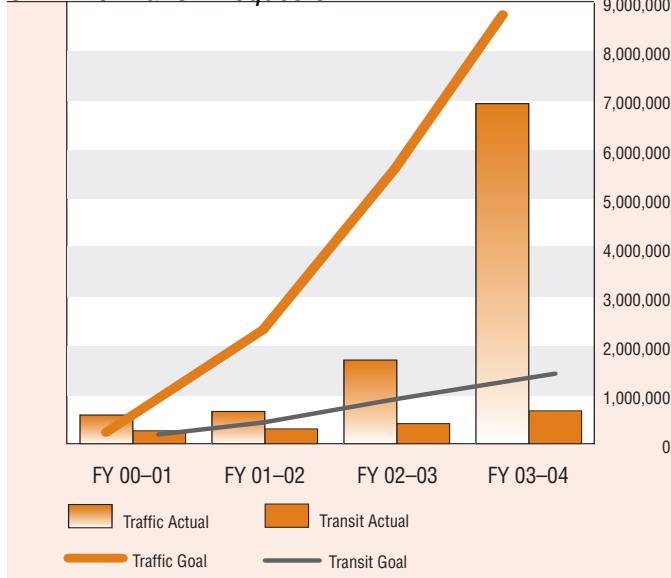


figure 4

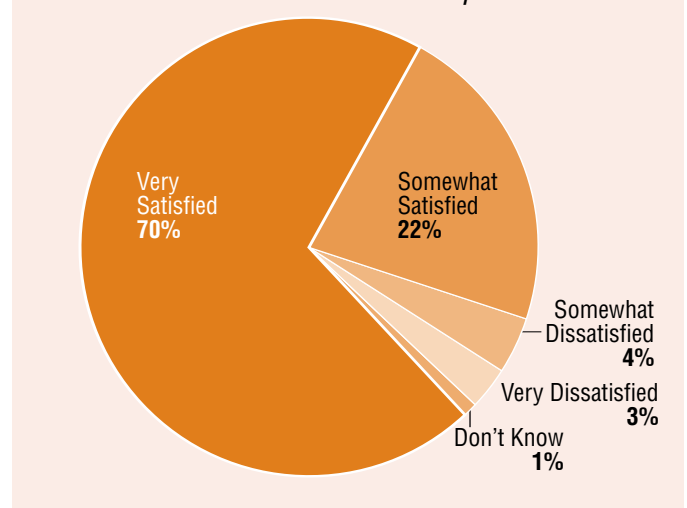
511 Information Requests*



* All dissemination methods

figure 5

Customer Satisfaction* — 511 Telephone Service



* 1,001 users of 511 telephone service surveyed in May 2004.

511 — Regional Rideshare Program

The Regional Rideshare Program (RRP) encourages people to use alternatives to driving alone (such as carpooling, vanpooling, riding transit, bicycling, telecommuting and walking). The program provides information about travel options, with a particular focus on facilitating “matches” between interested carpoolers and vanpoolers, and conducts marketing and outreach efforts to employers and the public. Under contract to MTC, RIDES for Bay Area Commuters, Inc. provides regional program services, with subcontractor support from Solano/Napa Commuter Information.

Project Objective

To shift individuals from single-occupant vehicles to carpools, vanpools and other transportation alternatives, and help individuals sustain this shift in order to mitigate the growth of traffic congestion and reduce motor vehicle emissions in the Bay Area.

Highlights

In FY 2003–04, the program:

- Placed 8,170 clients in a commute alternative, or 26 percent of clients who contacted the RRP contractor seeking information
- Achieved a 75 percent satisfaction rating from program customers regarding their overall experience with 511 rideshare services
- Reduced congestion by eliminating 1.8 million vehicle trips (approximately 50.5 million vehicle miles traveled) from Bay Area roads

Project Funding

The following table provides funding information for the RRP project. This information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which, in the case of the RRP, are entirely comprised of Transportation Fund for Clean Air (TFCA) funds. Changes from funding as reported in the 2003 Project Performance Report represent a roughly 30 percent decrease in federal funds for the project over the 25-year planning horizon, beginning in FY 2007–08, based on investment decisions for the Transportation 2030 plan.

Regional Rideshare Program							
Funding Source	Fiscal Year					5-Year Total	Percent of Total
	(In thousands of 2004 dollars)						
	03–04	04–05	05–06	06–07	07–08		
STP/CMAQ	\$4,800	\$2,718	\$3,016	\$3,020	\$1,955	\$15,509	77%
Other	1,000	971	943	915	888	4,717	23%
Total	\$5,800	\$3,689	\$3,959	\$3,935	\$2,843	\$20,226	

Target Customers

The Regional Rideshare Program aims to serve people who make commute trips, trips to/from transit and trips to airports.

Measuring Performance

The RRP regularly conducts surveys to determine the effects of program activities on client mode choice. Following a methodology developed by researchers at California State University, Chico, the program uses “Report Card” and survey data to mathematically derive 1) the number of clients placed in an alternative to driving alone, or “placements,” 2) the number of vehicle trips reduced, and 3) the reduction in vehicle miles traveled (VMT). In addition, MTC and the RRP Technical Advisory Committee (TAC) establish a series of annual performance goals for the program. The program also periodically conducts special surveys to measure factors such as customer satisfaction.

Project Performance

RRP performance stabilized in FY 2003-04 after several years of decline as measured by reductions in vehicle trips and vehicle miles traveled. The RRP eliminated about 1.8 million vehicle trips (see Figure 1) and reduced VMT by 50.5 million miles (see Figure 2). The VMT reductions were 93 percent of the goal of 54.1 million established by MTC and the RRP TAC.

In consultation with the RRP TAC, MTC lowered performance goals in FY 2003–04 to bring them more in line with anticipated contractor performance while keeping them at a level still challenging for the contractor to attain. As a result, the contractor came closer to meeting, and in some cases actually met, goals in

“We really appreciate the 511 matching service. Our carpool would not have been possible without it.”
— 511 customer

FY 2003–04, improving over FY 2002–03. In FY 2003–04, (see Figure 3) the program:

- Placed 8,170 people in commute alternatives, 8 percent below the goal of 8,900; and
- Enlisted 13,453 ridematching registrants (each of whom received a matchlist), 21 percent below the goal of 17,000.

figure 1

Vehicle Trips Reduced

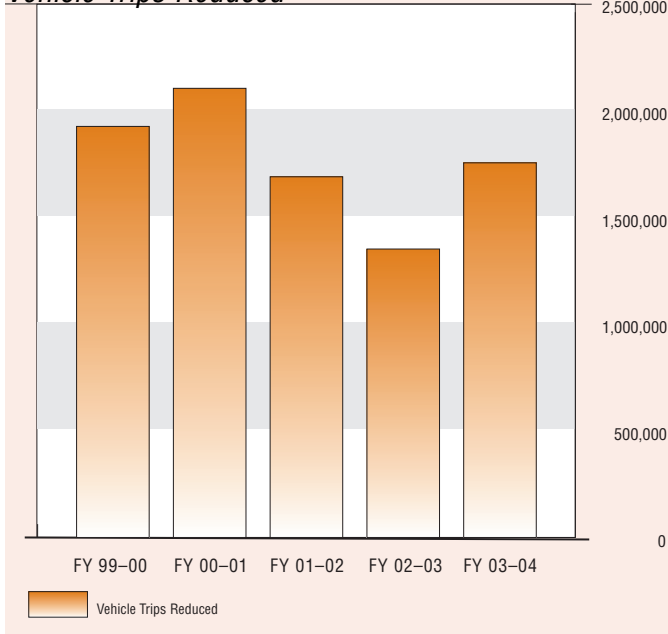
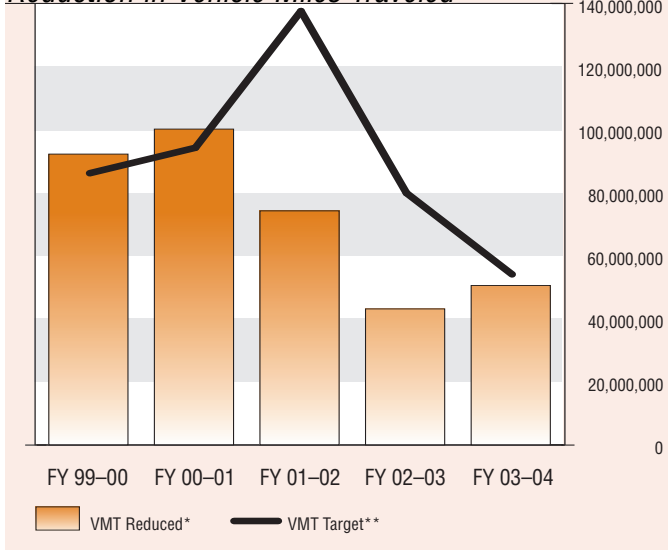


figure 2

Reduction in Vehicle Miles Traveled



* Vehicle Miles Traveled (VMT) Reduced is calculated as a function of the number of people placed in a commute alternative, the length of time they remain in the commute alternative and the average distance traveled via the commute alternative.

** The Transportation Fund for Clean Air (TFCA) VMT Reduced Target is for an October-to-September fiscal year, an offset of three months from MTC's standard July-to-June fiscal year.

As a benchmark for recent RRP performance, MTC and the TAC researched national trends and program performance in other regions of the country. The research revealed that car-pool and vanpool rates in the Bay Area are comparable to most other major metropolitan areas. The RRP's placement rate also compared favorably with other metropolitan areas.

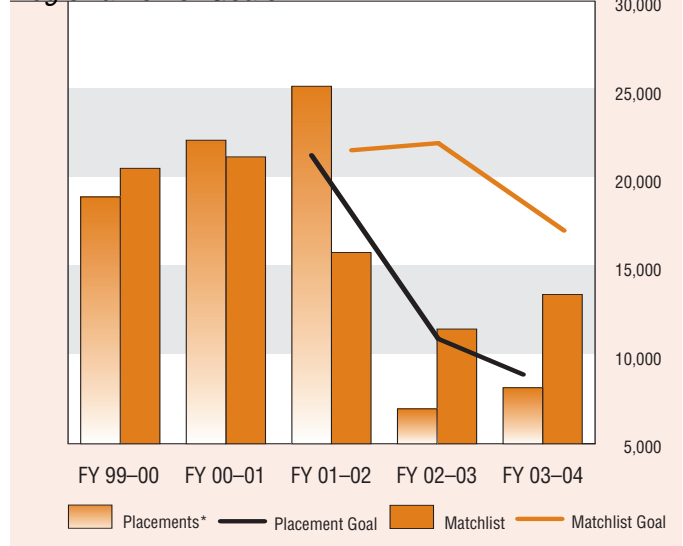
In a survey of 184 randomly sampled individuals who received a matchlist between July 2003 and September 2003, 75 percent of respondents indicated they were satisfied with regional ridematching services. Of those who were dissatisfied, the principal reasons cited were a paucity of other commuters on their matchlists and out-of-date names. One important survey finding was that the program should focus on improving these two aspects of the ridematching service. Other findings were that customer service is a strength of the rideshare program, and that the Internet-based ridematching system (launched in August 2002) is generally viewed posi-

"The Regional Rideshare Program has been very helpful in raising our employees' awareness of commute alternatives in our community."

— 511 customer

figure 3

Placements and Ridematching Registrants vs. Goals



* "Placements" is a calculated number based on measured statistics (matchlists generated [new and updated], placement calls made, new van rides, information requests fulfilled, promotion results and bike buddy program results) and their associated placement rates derived from follow-up surveys.

tively. Ninety percent of respondents indicated they were likely to use the program's services again.

The rideshare contractor's responsibilities include administrative, coordination, marketing and outreach activities necessary to form carpools and vanpools in the region. In FY 2003–04, the contractor worked on the following initiatives:

- “Rideshare Thursdays”, introduced in fall 2003, is a regional marketing campaign to raise public awareness of carpooling through a consistent call-to-action and continuous local rideshare agency participation.
- The “Rideshare to School” pilot project explored the potential for using the regional ridematching database to match school children and their parents in carpools. MTC has directed the contractor not to expand the rideshare to school project at this time because of implementation complexity, shrinking resources and recent performance challenges. The project also is a departure from the TAC's direction to focus on the RRP's priority market — commuters. Despite MTC's decision not to expand the program, the existing school pilot programs will be maintained.
- The RRP contractor made changes to the 511 rideshare Web site, based on focus group findings. The changes include transitioning the region's static HOV lane and park-and-ride lot maps to interactive, GIS-based maps. Information on the Web site also was reorganized and streamlined to make it easier to navigate.
- The RRP contractor initiated a pilot program in April 2004 to offer regional incentives for vanpooling. The one-time \$300 incentive is available for as many as 50 new vanpools on a ‘first come, first served’ basis, as long as the vans stay on the road for at least 3 months. Rideshare customers are reacting positively to the incentive. In June 2004, 15 vanpools were formed — more than in any other month in FY 2003–04. Overall, the RRP formed 65 vanpools in FY 2003–04, 81 percent of its goal of 80 new vanpools.

- The RRP contractor conducted the Vanpool Driver Satisfaction Survey in February 2004. The survey helps the program better understand and support the needs of vanpool drivers who are typically responsible for vanpool organization. The RRP provides important support services like start-up kits covering the ‘how to’ of vanpool formation and help for drivers filling empty seats. Supporting vanpools is a time-intensive process; however, vanpools have two to three times as many passengers as carpools, and once a vanpool is established, it's usually operational for a longer time than a carpool. Of the 184 survey respondents, 165 indicated they were currently driving or coordinating a vanpool, and 93 percent were satisfied with RRP services. The survey also updated key vanpool operating statistics that are used to calculate program performance measures such as VMT reduced.

In FY 2003–04, MTC and the TAC continued to systematically address recommendations from the program's three-year Strategic Plan. Important tasks were 1) developing an understanding of all local and regional employer outreach services to avoid duplication of effort in service planning and delivery and 2) establishing a list of RRP core services on which to focus future regional program efforts. As a result of the work on the Strategic Plan and because of the impending reduction in funds for the program beginning in FY 2007–08, MTC modified the FY 2004–05 scope of work to:

- Reallocate program resources from lower-priority tasks to more accurately reflect the priorities of the program and to increase resources for core services, including ridematching, vanpooling, regional transportation information broker, regional marketing and monitoring/evaluation
- Require contractor documentation of core program functions
- Revise performance measures based upon FY 2003–04 achievements

“I appreciate all your help in trying to find vanpool riders for us. You people are doing a great job of lessening the congestion on our freeways. Keep up the good work.”
— 511 customer

Future Expectations

MTC, the TAC and the RRP contractor will work to maintain program performance in FY 2004–05. MTC expects the RRP to continue to place a special focus on program work tasks that are direct indicators of carpool and vanpool formation, including registering new ridematch customers, making placement calls and forming vanpools. MTC, in consultation with the TAC and the rideshare contractor, has incorporated new performance goals for FY 2004–05 in the rideshare contract (see Figure 4).

Specific RRP tasks in FY 2004–05 include:

- The registration process for the Internet ridematching system will be simplified. The RRP has received user feedback that the process is cumbersome and an impediment to using the Internet ridematching system.
- The RRP will explore ideas for alternative regional vanpool incentive programs. One idea for consideration is a subsidy program to assist struggling vanpools. Under this option, a subsidy could be used to offset the costs of operating a vanpool, allowing the vanpool to temporarily stay on the road with fewer riders. If feasible, the subsidy would have to be crafted in such a way as to not become a disincentive to increasing vanpool ridership.

figure 4

Regional Rideshare Program Performance Goals for FY 2004–05

Performance Measure	Performance Goal
Ridematching Registrants	17,000
Placement Calls	14,000
Vanpools Formed	80
Clients Placed In Alternative Modes	9,200
Vehicle Trips Reduced	1,970,000
Vehicle Miles of Travel Reduced	53,110,000

FY 2004–05 is the final year of the five-year contract with RIDES for Bay Area Commuters, Inc. for RRP services. A subcommittee of the TAC will assist in a new procurement, including defining the RRP's scope of work. For counties that wish to directly provide employer outreach and services through their own local programs, this responsibility will be delegated to them along with funding for implementation. The RRP will provide employer outreach and services in all other counties. MTC released a draft Request For Proposals (RFP) to get feedback on the document from the TAC, CMAs, potential bidders and others. The final RFP was released in fall 2004, and covers RRP services from FY 2005–06 through FY 2010–11.

511 — Regional Transit Information System

The Regional Transit Information System (RTIS) gathers, organizes and disseminates schedule, route and fare information for all public transit services in the region through the transit.511.org Web site (formerly through the transitinfo.org Web site). This Web site also includes the popular 511 TakeTransit Trip PlannerSM, which travelers can use to generate transit itineraries for intra- and inter-agency trips. Many transit agency call centers connect to the same transit trip-planning database to provide information to their customers by telephone.

The RTIS includes three key system components: 1) the Regional Transit Database (RTD), in which MTC maintains and updates transit service data; 2) a set of software programs or applications that allow the data in the RTD to be displayed as schedule or route information on the Internet, or to generate interagency transit itineraries with the trip planner; and 3) a communications system that uses either the Internet or a dedicated frame-relay network to connect the public and transit agencies to the software programs.

The RTIS is an MTC-managed project that relies on the support and cooperation of Bay Area transit operators. MTC manages a contract with bd Systems (formerly GIS/Trans, Ltd.) for design, development, implementation and maintenance of the RTIS, including the database, software and communications network.

Project Objective

To provide the public with accurate, reliable and comprehensive information on all transit services in the Bay Area.

Highlights

FY 2003–04 performance highlights include the following:

- The new transit information Web site at transit.511.org was launched in November, replacing the transitinfo.org Web site. One new feature, “Popular Destinations,” provides transit access information for important local and regional attractions.

- Golden Gate Transit (buses) and Valley Transportation Authority (VTA) were added to the 511 TakeTransit Trip PlannerSM.
- 2.9 million trip itineraries were generated over the Internet — a 38 percent increase over FY 2002–03. In all, 6.1 million trip itineraries have been generated since MTC first introduced the TakeTransit Trip PlannerSM to the region in FY 2001–02.

Project Funding

The following table provides funding information for the RTIS project. This information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which, in the case of RTIS, are entirely comprised of State Transit Assistance (STA) funds.

Regional Transit Information System

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03–04	04–05	05–06	06–07	07–08		
STP/CMAQ	\$ 700	\$ 777	\$848	\$824	\$ 888	\$4,037	78%
Other	678	101	110	107	115	1,111	22%
Total	\$1,378	\$878	\$958	\$931	\$1,003	\$5,148	

Target Customers

Current and potential transit users as well as transit agencies.

Measuring Performance

Performance of the RTIS is measured by tracking the following statistics for the Web site and the trip planner:

- Number of user sessions (“visit” made by an individual computer; requests from that same computer within a 20-minute period are counted as a single visit)
- Number of page requests (Web pages requested by an individual computer potentially include multiple requests for variations of the same page; for example, each time a user zooms in one level on a map represents one page request) overall and for transit agency information sorted by subcategory
- Trip-planner itineraries generated

The number of transit operators included in the trip planner also is an important determinant of the comprehensiveness of the service.

In FY 2003–04, the methodology for calculating user sessions and page requests was modified as part of the transition from the old transitinfo.org Web site to the new transit.511.org Web site. As a result, the new data can no longer be directly compared to previous year's data. MTC plans to develop a new performance baseline for these elements of the RTIS project beginning with data gathered in March 2004. Only historical data on trip-planner itineraries generated has remained constant and will be presented in this report.

figure 1

511/Transit Web Site User Interface



RTIS customers regularly provide feedback on transit.511.org and the trip planner via an automatic e-mail link at the site. Customer feedback is an important tool that MTC uses to 1) assist customers with their questions about the system, 2) improve the accuracy of transit data, and 3) refine the search logic and algorithms that the trip planner uses to generate trip itineraries.

Project Performance

In November 2003, MTC transitioned the transitinfo.org Web site to the new transit.511.org Web site (see Figure 1 titled “511/Transit Web Site User Interface”). The move streamlined access to transit information through the 511 Web portal and reinforced the same overall approach to Web page format, design and content as the other modes of traveler information available through 511.org.

The new transit Web site offers functionality to improve interactive mapping capabilities, refine trip itinerary requests, customize system output, provide transit information for popular destinations and simplify transit schedule display, including making schedules more accessible to the

“I REALLY like the new itinerary layout. It is very informative and detailed, yet it is easy to use.”
— user of trip planner

figure 2

Quarterly Trip-Planner Itineraries Generated (non-cumulative)

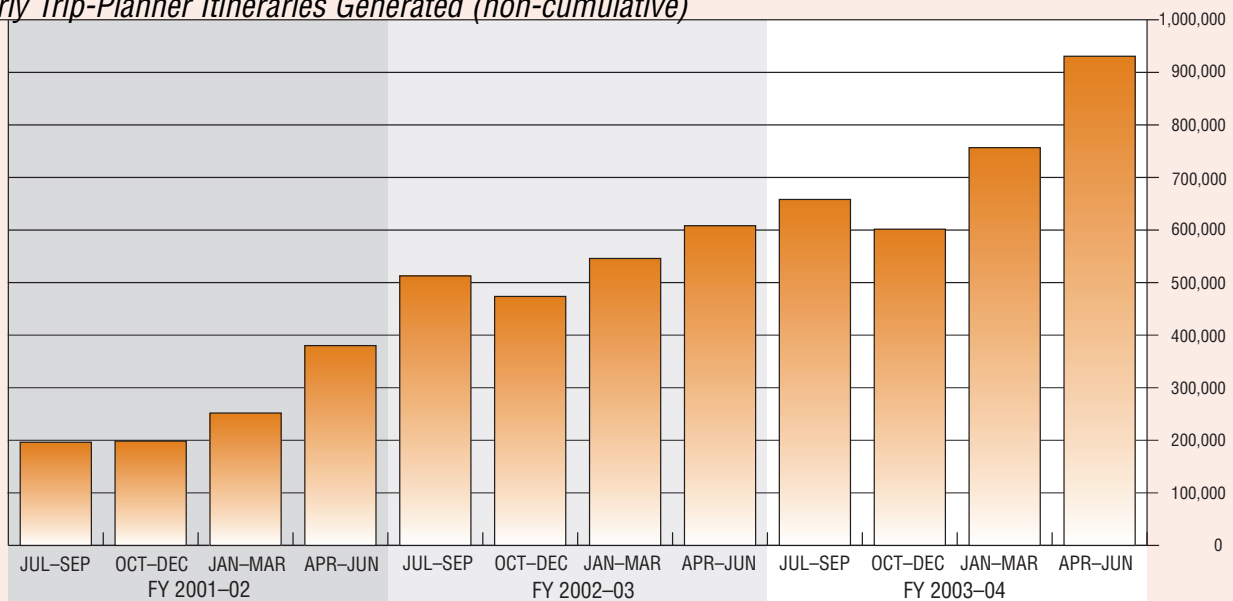


figure 3

Page Requests by Information Type (excluding TakeTransit Trip PlannerSM), March – June 2004

Page Type	March 2004	April 2004	May 2004	June 2004	TOTAL
Schedules	222,495	221,378	228,463	265,701	938,037
System and Route Maps	712,185	739,990	793,137	861,471	3,106,783
Popular Destinations	67,323	97,944	104,410	86,889	356,566
Transit Provider/Partner	109,711	128,147	116,519	111,833	466,210
Fares	37,144	38,915	39,094	40,955	156,108
Announcements	39,519	41,006	44,636	50,585	175,746
Disabled/Senior Services	2,177	2,524	2,577	2,988	10,266
Other Info/Links	3,482	3,487	3,772	4,406	15,147

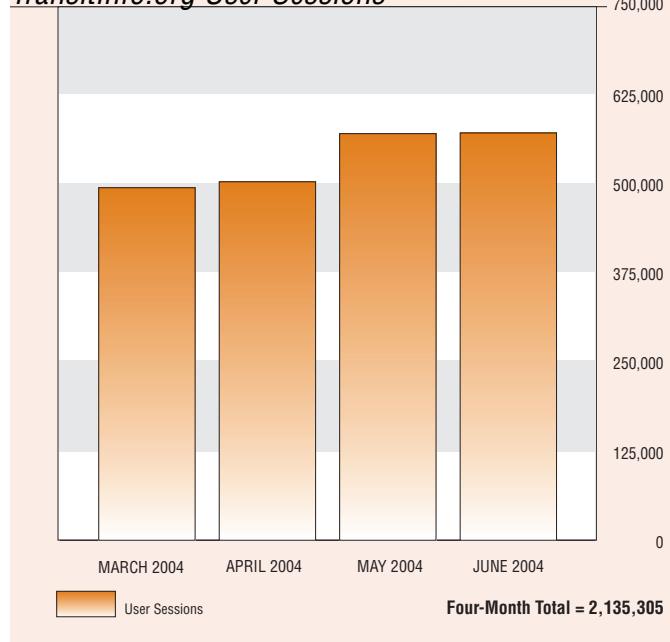
visually impaired. The RTIS project also introduced a new Content Management System (CMS) which allows transit operators to directly update agency service data on the transit.511.org Web site.

During its initial launch, the 511 Web site experienced several problems that generally resulted in slow response times and system availability issues. The capacity problem was principally caused by the more graphic-intensive nature of the new Web site. The contractor resolved the issue by increasing processing power through the addition of new hardware and expediting map-based searches by stripping out as much irrelevant data from the search as possible. The contractor also resolved address-matching inefficiencies initially experienced for streets and landmarks. While the contractor has resolved the primary Web site capacity issues, some trip planner software problems persist.

The enormous success of the 511 TakeTransit Trip PlannerSM has at times overburdened the existing TranStar software which powers the trip planner. The TranStar system has difficulties processing the volume of trip itinerary requests, and the software is written in a computer language that is outdated and increasingly difficult to support. At times, the TranStar system can lock up and shut down the entire trip planning database. MTC is implementing short-term fixes, but a long-term solution to the trip planner software problems is required.

Usage of the TakeTransit Trip PlannerSM continued to grow in FY 2003–04. Transit patrons generated 2.9 million itineraries using the trip planner in FY 2003–04, up 38 percent from the previous fiscal year total of 2.1 million. In summer 2003, MTC implemented a regional marketing campaign for all modes of

figure 4

TransitInfo.org User Sessions

travel covered by the 511 traveler information service. In the fourth quarter of FY 2003–04, the number of trip itineraries generated reached a quarterly high of 930,691, which was 23 percent above the previous high of 756,817. The fourth quarter increase is likely due to the addition of Golden Gate Transit (buses) and VTA to the trip planner (see Figure 2).

For the period from March through June 2004, page requests of information through the transit.511.org Web site were 5.2 million, not including use of the TakeTransit Trip PlannerSM. Of these page requests, 18 percent were for transit schedule information; 59 percent were for transit system and route map pages; and 7 percent were for popular desti-

nations information. A breakdown of transit agency information page requests by type is included in Figure 3. Transit.511.org user sessions for the four-month period were 2.1 million (see Figure 4).

In the 2003 *Project Performance Report*, MTC set an internal goal to include all fixed-route public transit operators in the 511 TakeTransit Trip PlannerSM by June 2004. Some significant steps toward this goal were taken with the addition of Golden Gate Transit (buses) and VTA in April 2004; however, information for about one-third of the region's transit operators is still not available on the site. Some transit operators, such as SamTrans and Santa Rosa CityBus, have been on the verge of participation for many months. A significant challenge has been the varying levels of resources available to some of the agencies to meet the data exchange requirements for the trip-planner system on an ongoing basis. Another challenge has been that many transit agencies — and MTC — are struggling with budget problems, making it difficult to devote scarce resources to the RTIS project. Finally, some transit operators express concerns about the ability of the trip planning software to handle the increasing demands placed upon it. MTC continues to work with transit agency staff to improve the system.

Future Expectations

MTC has set the following project goals for FY 2004–05:

- MTC expects to include all fixed-route public transit operators in the 511 TakeTransit Trip PlannerSM; however, MTC's previous schedule to accomplish this task has proven to be too optimistic. Experience shows that transit operator resources are stretched thin, and that, despite MTC's priority for full transit operator participation in the trip planner, transit operator priorities differ. MTC will continue to provide support to transit agencies and encourage them to make the necessary commitments to the project. Transit agencies still to be added include: SamTrans, Santa Rosa CityBus, Napa VINE, Sonoma County Transit, Vacaville City Coach, Fairfield-Suisun Transit, American Canyon Transit, Cloverdale Transit, Healdsburg In-City Transit and Petaluma Transit. Of these operators, SamTrans and Santa Rosa CityBus are MTC's top priorities for FY 2004–05, since they are nearly ready to be included.

"I am impressed with your Web site. The trip planner is excellent. Now there finally is a way to figure out where the buses go to. I will now start to use public transit because of this great tool."
— user of trip planner

- MTC expects use of the trip planner to increase for the foreseeable future as new operators are added and through targeted marketing of the product, and will proceed with plans to replace the existing TranStar trip planning software.
- MTC will design and implement an Extensible Markup Language (XML) interface between the RTD and individual transit operators' scheduling systems to simplify and expedite the transfer of transit operator data to the RTD.

Several transit agencies in the region are providing or have plans to provide real-time transit arrival information to make their service more customer-friendly. Regional Measure 2 (RM 2), which passed by voter referendum in March 2004, makes \$20 million in RM 2 funds available under a competitive grant program to enhance real-time transit arrival information in the region. MTC expects to release a call for projects and award funds in FY 2004–05. One condition of receiving the funds is to make the information available to the public through the 511 phone and Web service. Beyond the RM 2 grant program, MTC will continue to explore opportunities to partner with the region's transit agencies and their contractors to make real-time transit information available through the new Web site and the 511 phone number. To this end, MTC is working with Muni to display real-time transit arrivals for San Francisco Muni's light-rail system in the 511 traveler information service on a pilot basis in FY 2004–05.

INCIDENT MANAGEMENT PROGRAM

Incident Management Program

The Incident Management Program is an example of a mature regional program, under way since the early 1990s. The goal of this program is to quickly identify and respond to freeway incidents such as breakdowns and accidents in order to minimize their impacts in terms of congestion, public safety and air quality, and to increase the reliability of the freeway system and better manage traffic flow. Caltrans estimates that over 50 percent of all traffic congestion is due to non-recurring incidents.

The program, which is administered through the MTC Service Authority for Freeways and Expressways (SAFE), is made up of two complementary projects:

- Call Box Program — A regional network of call boxes is available 24 hours per day for motorists to request emergency roadside assistance.
- Freeway Service Patrol (FSP) — A fleet of roving tow truck operators clear freeway accidents, assist motorists, and remove dangerous debris from the roadway, primarily during peak commute periods.

Project Funding

The following table provides project funding information for the Incident Management Program. This information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which include SAFE funds and state FSP and Traffic Mitigation Program funds. In order to help the region deliver critical STIP-funded transportation projects that would otherwise have been impacted by the state's financial crisis, MTC has delayed programming \$2.3 million in STP/CMAQ funds from FY 2005–06 and FY 2006–07 to FY 2007–08. This action frees up STP/CMAQ programming for the STIP-funded projects, allowing them to proceed on schedule.

Incident Management Program (FSP/Call Box)

Incident Management Program (101 Year Box)							
Funding Source	Fiscal Year					5-Year Total	Percent of Total
	(In thousands of 2004 dollars)						
	03-04	04-05	05-06	06-07	07-08		
STP/CMAQ	\$ 0	\$ 0	\$ 1,131	\$ 1,098	\$ 4,087	\$ 6,316	11%
Other	11,070	10,438	11,571	9,733	9,644	52,456	89%
Total	\$11,070	\$10,438	\$12,702	\$10,831	\$13,731	\$58,772	

Call Box Program

The Call Box Program gives motorists who need roadside assistance an effective means of communication 24 hours per day, allowing them to speak directly to an operator to report flat tires, mechanical breakdowns or dangerous roadway conditions. By speeding the removal of stalled vehicles and other hazards, the call box network also helps in the region's fight against traffic congestion. About 3,200 call boxes are installed on more than 1,100 miles of urban, suburban and rural freeways and expressways in the nine-county Bay Area. Call boxes are spaced between one quarter-mile and two-mile intervals, with most at half-mile intervals.

In June 2002, MTC SAFE adopted a Five-Year Strategic and Financial Plan for the Call Box Program that calls for the phased removal of 25 percent to 30 percent of the Bay Area's call boxes. The plan to reduce the number of call boxes was developed in response to the continued surge in cellular phone ownership and a corresponding decline in call box usage, a trend that continued in 2003 (see Figure 1). By reducing the number of call boxes, MTC SAFE is estimating a savings of about \$3.5 million in operating and capital costs over a five-year period, which will be used to fund new incident management efforts.

The Call Box Program is a joint project between Caltrans, the California Highway Patrol (CHP) and MTC SAFE. MTC SAFE manages contracts for call answering services with a private call center as well as with the CHP, and for call box installation and maintenance.

Project Objective

To provide an effective means of communication 24 hours per day for freeway motorists who need roadside assistance.

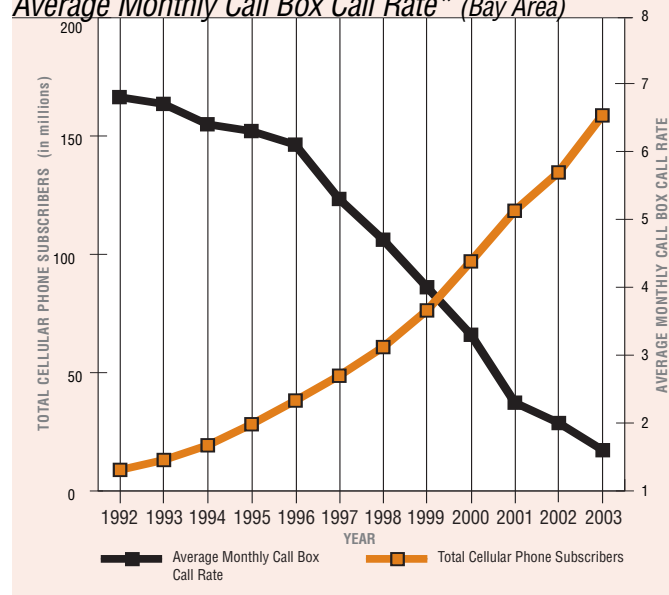
Highlights

In FY 2003–04:

- Call answering performance continued to improve.
- Call volumes continued to decline as cell phone usage continued to rise.
- The planned reduction of the Bay Area's call box network from 3,500 to 2,600 got under way.
- Two pilot projects to test alternative means of motorist-aid communications to mitigate the impact of the planned service reductions were initiated.

figure 1

Number of Cell Phone Subscribers (U.S.) vs. Average Monthly Call Box Call Rate (Bay Area)*



* Number (average) of calls made per call box per month.

Project Funding

See Incident Management Program introduction (page 40) for a description of call box funding sources.

Target Customers

All motorists using the approximately 1,100 miles of freeways and expressways in the Bay Area covered by the call box network.

Measuring Performance

There are three ways in which performance of the Call Box Program is measured:

- Average call delay — the time it takes for a call box call to be answered, on average, for all calls in a given month
- Percent of calls answered within a specified time — the percentage of calls answered within 20 seconds, 90 seconds or two minutes
- System call-in performance — the percentage of call boxes in the system failing to meet automated maintenance call-in requirements, which confirm system availability

Four performance ranges are set forth in the contracts for both call answering and call box maintenance. Performance is assessed monthly. Incentive payments are provided when

contractors achieve specific performance levels. For example, in the maintenance contract, performance below required standards results in a payment penalty of up to 10 percent. At the same time, performance above the standard results in a 5 percent payment bonus.

In FY 2003–04, MTC SAFE has remotely monitored a monthly sample of about 40 calls to measure call center effec-

tiveness, but the results are not tied to the contractor's compensation. MTC plans to implement the new measure as an incentive in the next service procurement in early 2005.

Project Performance

The incentives and disincentives built into the call box contract have fostered a high level of contractor service, as performance statistics continue to improve. In FY 2003–04, the average delay in call answering was 10 seconds, 33 percent faster than the contract goal of 15 seconds (see Figure 2). At the same time, 90 percent of all calls were answered within 20 seconds compared to the contract goal of 75 percent (see Figure 3), while 99.5 percent of all calls were answered within 90 seconds. System availability, as measured by the percentage of call boxes that do not meet automated maintenance call-in requirements, declined slightly to 3 percent in FY 2003–04, still better than the contract goal of 5 percent.

MTC SAFE began to implement a 25 to 30 percent net reduction in the Bay Area's network of 3,500 call boxes based on a recommendation from the Five-Year Strategic and Financial Plan. Through June 2004, about 300 call boxes were removed — mostly in Alameda County. Removal of select call boxes in other counties will occur in FY 2004–05. MTC SAFE installed 34 digital call boxes on the newly completed Carquinez Bridge.

Progress has been made in FY 2003–04 toward implementation of two pilot programs to test alternative means of motorist-aid communications to mitigate any impacts that could result from the reduction in call boxes and corresponding increase in call box spacing. The programs are:

- Cell phone pilot program — In April 2004, working closely with the Berkeley and San Jose Centers for Independent Living, MTC SAFE distributed cell phones to 37 persons with disabilities for use in the event they become stranded on the freeway. At the conclusion of the pilot, a survey will be conducted to evaluate their experiences.
- Closed circuit television (CCTV) incident detection pilot program — MTC SAFE, in partnership with CHP and Caltrans, is working with two different vendors to test incident detection equipment and software. 12 cameras have been installed on the freeway with the intention of gathering incident information, displaying it on the Internet (to allow remote access by pilot participants) and using it to dispatch emergency assistance to help stranded motorists or address other situations.

figure 2

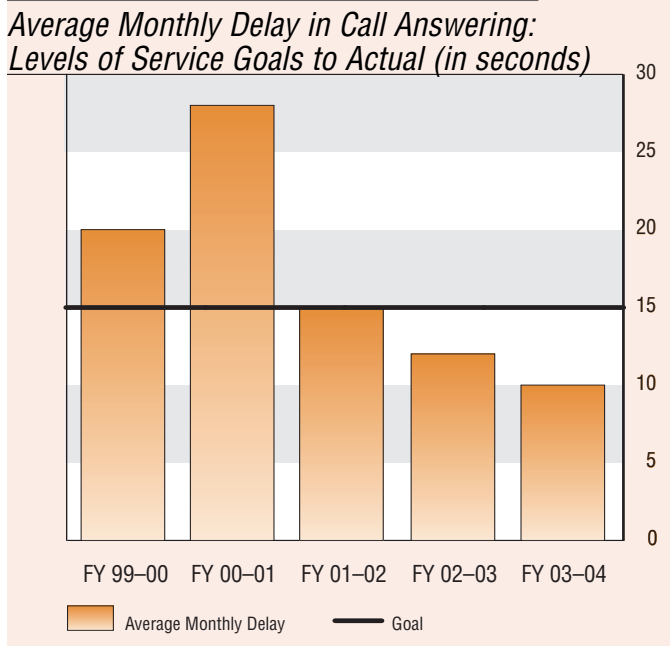
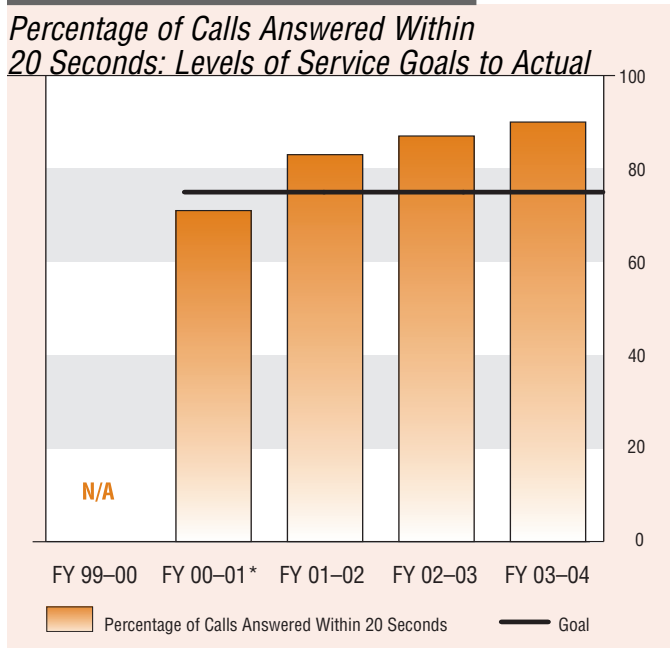


figure 3



* Does not include July 2000

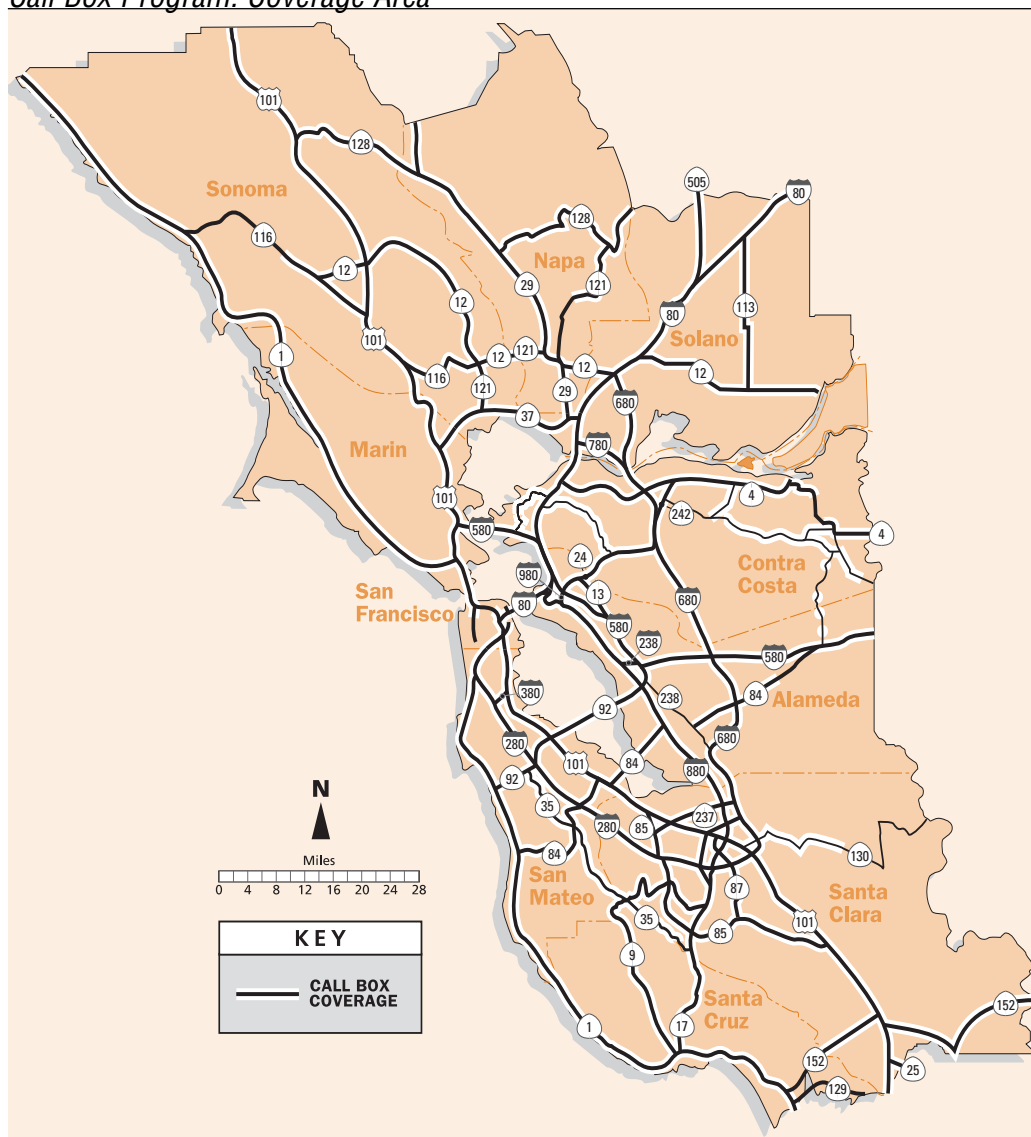
Future Expectations

In FY 2004–05, the Call Box Program will maintain its focus on assuring quality customer service and implementing the recommendations identified in the Five-Year Strategic and Financial Plan. Specific efforts will include the following:

- **Call box inventory** — The program will remove the balance of 650 call boxes targeted for removal in the Strategic Plan. In addition, 140 more call boxes will be installed on the Carquinez and San Mateo-Hayward bridges.
- **Communications technology upgrade** — Currently, Bay Area call boxes rely on analog cellular communication technology. The Federal Communication Commission
- **Pilot projects** — The cell phone and CCTV incident detection pilot programs will be completed and recommendations on how to proceed will be made.
- **Call center procurement** — MTC SAFE will conduct a procurement for call answering services in FY 2004–05. The procurement will provide call answering for the

MTC SAFE in addition to the SAFEs for the regional transportation planning agencies of Monterey, San Luis Obispo and Santa Cruz counties. The increased call volume should drive down the per call cost of the contract, saving money for all agencies. As part of the procurement, MTC also expects to establish a new performance measure to gauge contractor staff effectiveness at interacting with callers, and to establish higher performance standards.

Call Box Program: Coverage Area



Freeway Service Patrol

The Freeway Service Patrol (FSP) is a fleet of roving tow trucks that help clear accidents, assist motorists, and remove dangerous debris from some 441 miles of the Bay Area's freeways, primarily during peak commute periods. FSP drivers are frequently the first to arrive at accident scenes or find stranded motorists. They also respond to radio-dispatched requests for assistance from the CHP.

FSP drivers patrol "beats," i.e., route segments, that are selected based on several factors, including a high rate of traffic congestion, frequent accidents or stalls, and lack of shoulder space for disabled vehicles. The range of free assistance includes changing a flat tire, jump-starting a dead battery, refilling a radiator or providing a gallon of fuel. If a vehicle will not start, it is towed off the freeway to the nearest CHP-identified location.

The FSP is a joint project of Caltrans, the CHP and MTC SAFE. MTC SAFE manages contracts for motorist assistance services with multiple Bay Area tow contractors.

Project Objectives

To decrease congestion and improve safety and air quality by quickly clearing accidents, stalls and roadway debris on designated freeway and expressway segments, generally during peak congestion hours.

Highlights

In FY 2003–04, the FSP achieved the following:

- Responded to more than 130,000 incidents, 55 percent of which involved motorists in stalled vehicles
- Continued implementation of a strategic expansion plan that resulted in additional hours of service on the existing 31-beat network and a 5 percent increase in total assists
- Earned a service rating of "excellent" from 95 percent of its customers

Project Revenues

See Incident Management Program introduction (page 40) for a description of Freeway Service Patrol funding sources.

Target Customers

All motorists driving during morning and afternoon commute hours on designated segments of the Bay Area freeway and expressway network.

Measuring Performance

The FSP program focuses on customer needs and rigorously monitors performance and service quality. Performance measures include:

- Average wait time for service
- Number of customers assisted per beat and per truck per hour
- Overall customer rating of FSP service, including suggestions on service improvements
- Percentage of assists involving people

Cumulative savings in delay, fuel and vehicle emissions are also periodically calculated by beat, based on a methodology developed by researchers in the Partners for Advanced Transportation and Highways (PATH) program at the University of California, Berkeley under contract to Caltrans. PATH continues to refine the methodology to reflect improvements in measuring vehicle emissions. Because of these refinements, direct comparison of results between years cannot be made. The model was last run in calendar year 2002 and found that the FSP program saved motorists roughly 4.8 million hours of delay, reduced fuel consumption by 2 million gallons and reduced pollutants released into the air by 835 tons. MTC anticipates that Caltrans will run the model for calendar year 2003 and publish the results in late 2004 or early 2005.

Project Performance

Since FY 1999–2000, MTC SAFE has strategically expanded FSP service. In FY 2003–04 — the final year of the original service expansion plan — new weekend, midday and morning service hours were added on select beats. FSP performed 130,078 assists, of which 55 percent involved people. Systemwide results for FSP performance over the past five fiscal years are summarized in Figure 1.

MTC SAFE uses two customer-focused benchmarks to measure FSP performance: 1) average wait time per assist, i.e., the time a person waits for FSP help to arrive at his or her location (currently set at 10 minutes or less), and 2) customer service rating — the percentage of customers using the service who rate the service they received as "excellent" (currently set at 90 percent).

In FY 2003–04, the average wait time decreased by 5 percent from FY 2002–03 to 9.4 minutes. In terms of customer satisfaction, survey results from more than 14,600 respondents show that 95 percent of FSP customers rated the service "excellent." The FSP has exceeded the performance standards for average

Freeway Service Patrol Route Map

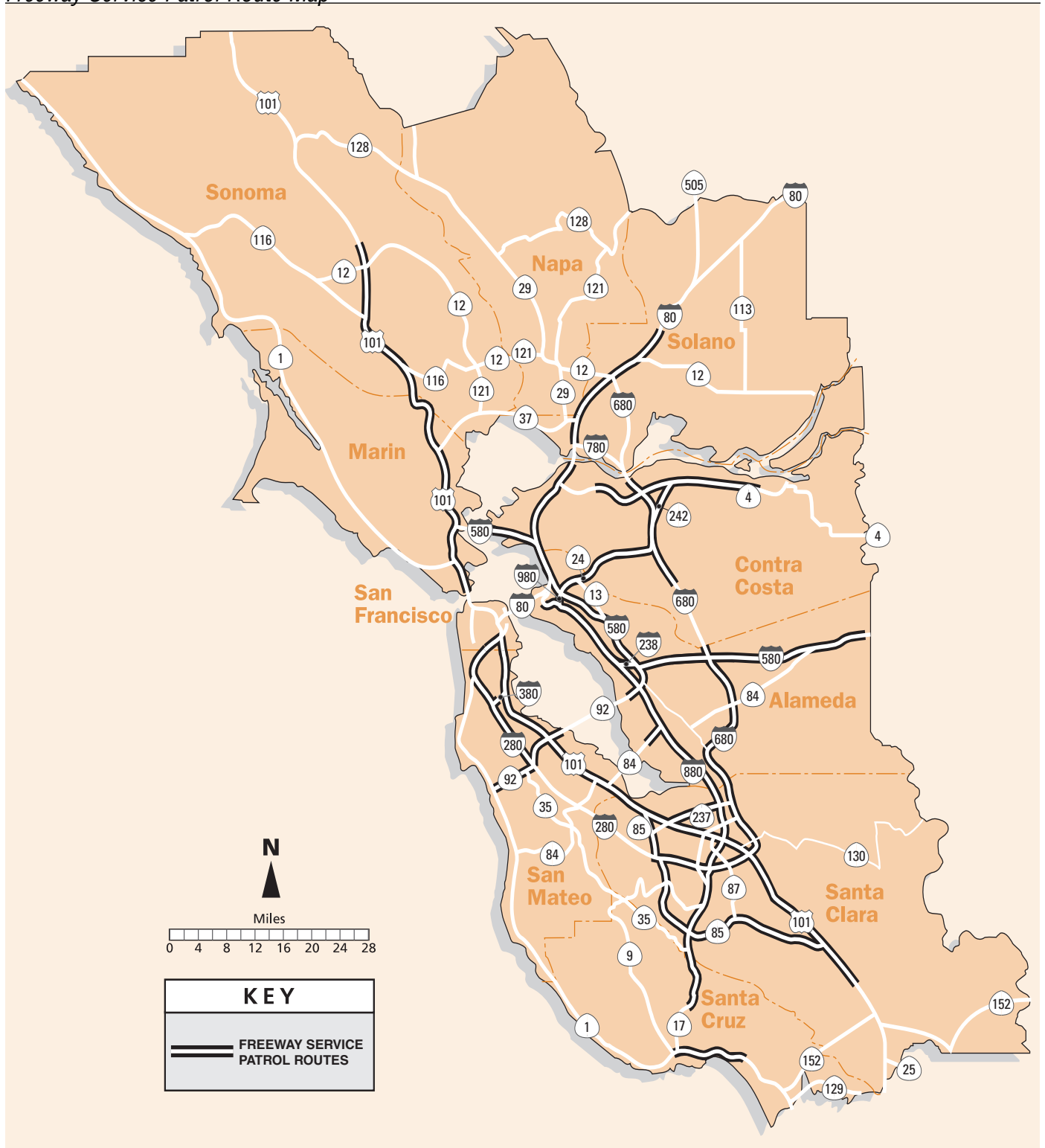


figure 1

<i>FSP Performance</i>				
	Total Assists	Average Wait Time per Assist	Assists per Truck per Hour	Assists per Beat per Hour
FY 2003–04	130,078	9.40	0.90	1.98
FY 2002–03	124,397	9.89	0.81	1.84
FY 2001–02	114,982	9.83	0.90	2.02
FY 2000–01	106,808	9.90	0.99	2.04
FY 1999–2000	109,889	9.51	0.98	2.03

wait time and customer satisfaction since the program began. Actual productivity of the service as measured in terms of “Assists per Truck per Hour” and “Assists per Beat per Hour” increased roughly 11 percent and 8 percent respectively in FY 2003–04 from FY 2002–03 levels. The rate increases reflect the FSP’s continued emphasis on operational efficiency.

In FY 2003–04, FSP rebid contracts for 11 beats. The successful tow contractors assumed responsibility for operating the FSP service in summer 2004 for a 3-year period. The remaining 20 beats will be rebid in FY 2004–05, along with two new pilot beats.

The FSP requires robust fleet management and telecommunications capabilities to handle the dispatching of vehicles and to relay important incident information to project partners. The FSP initiated a migration from its existing Cellular Digital Packet Data (CDPD) wireless communication technology to the faster General Packet Radio Service (GPRS) technology. The migration was 75 percent complete as of June 2004. The FSP also made some minor networking improvements and upgraded the dispatching software that runs on the vehicle computers. Finally, the FSP is in the process of upgrading its computer server and hardware.

The Bay Area Incident Reporting System (BAIRS) and automatic vehicle location (AVL) integration project is ongoing. BAIRS is a newly implemented Caltrans system to assist in coordinating the timely deployment of Caltrans’ maintenance and construction vehicles. By integrating BAIRS with FSP AVL information, MTC and Caltrans hope to improve incident response. MTC and Caltrans are still in the process of defining requirements for the integration work.

Future Expectations

In terms of future project activities, the FSP has established the following goals:

- FSP will continue to enhance telecommunications and dispatching capabilities in FY 2003–04, including completion of the transition to GPRS wireless communication technology, completion of an upgrade of the FSP computer server and hardware and preparing for integration of the FSP AVL system with Caltrans’ BAIRS system.
- Contracts for tow truck services for two-thirds of FSP beats will be rebid in FY 2004–05.
- MTC will explore conducting a pilot project on one Bay Area freeway to reduce the time necessary to clear major incidents to 90 minutes from an average of four hours. Under this program, tow contractors would be required to possess heavy-duty tow trucks and employ tow drivers certified in handling major recoveries. If the scene is cleared within 90 minutes, an incentive payment would be paid to the tow contractor.
- Driver retention is an important issue for the FSP. Reducing driver turnover should lead to more consistent and higher quality service, as well as a reduction in project costs for recruitment and training. In support of this objective, MTC SAFE plans to audit a random sample of existing FSP tow contractors to ensure that employee wages and benefits cited in bids match actual expenditures for those budget items. MTC SAFE emphasizes employee compensation during the contractor selection process in order to foster driver retention, and will continue to confirm that employee compensation is not being sacrificed in the interest of company profits. The audit is likely to occur in FY 2005–06 after MTC completes procurement of the balance of tow truck services in FY 2004–05.

PROJECT PERFORMANCE REPORT

TECHNICAL ASSISTANCE PROGRAMS

Technical Assistance Programs

The Technical Assistance Program is designed to help Bay Area cities and counties to better manage local transportation facilities. Smaller jurisdictions tend to be the first focus of MTC's technical assistance projects since they often lack financial and technical resources; however, jurisdictions of all sizes receive assistance under three programs:

- The Pavement Management Program, which includes the Pavement Management Technical Assistance Program, helps evaluate pavement maintenance needs to support more timely and cost-effective budget decisions.
- The Regional Signal Timing Program helps coordinate traffic signal timing to improve traffic flow and air quality.
- The Traffic Engineering Technical Assistance Program provides traffic engineering services for projects that improve safety and mobility along arterials, and promote cooperation and collaboration across agency and modal boundaries.

These projects follow the same model for service delivery, which is to award grants to local jurisdictions on a competitive basis and to establish a pre-qualified list of consultants to provide technical assistance.

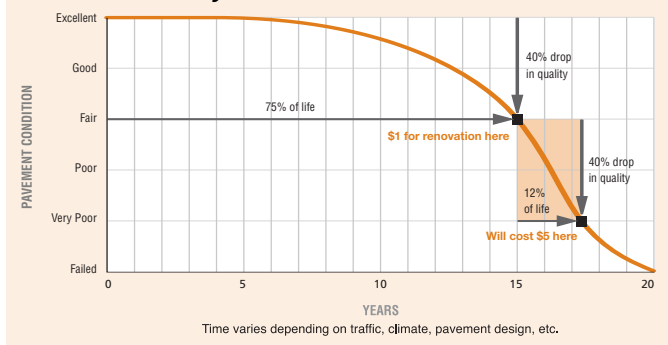
The technical assistance programs generate regional benefits by providing local jurisdictions with the expertise needed to operate and maintain their roadways. Specifically, the technical assistance programs 1) provide local jurisdictions with financial assistance in analyzing the maintenance and operational needs of their roadways, and 2) the technical expertise needed to make optimal use of the limited local resources available for investment in operations and maintenance.

Pavement Management Technical Assistance Program (P-TAP)

MTC's Pavement Management Program is a comprehensive effort to promote better pavement management and maintenance practices in the Bay Area. A critical concept in street and road maintenance is that, while pavements deteriorate only 40 percent in quality in the first 75 percent of their life, this deterioration subsequently accelerates rapidly, resulting in another 40 percent drop in quality in the next 12 percent of life (see Figure 1). Sound management practices allow for timely repairs, stretching limited dollars further.

figure 1

Pavement Life Cycle



MTC's program includes four key elements:

- **Pavement Management System (PMS)** — 106 of 109 cities and counties in the Bay Area use PMS software developed by MTC. A PMS is a computer-aided decision-making process used by public works personnel to maximize the benefits of investments in their road networks. The system is used to track pavement conditions, establish optimum repair programs, identify the impacts of inadequate budgets on pavement condition, and guide cost-effective expenditure of existing funds.
- **Pavement Management Technical Assistance Program (P-TAP)** — P-TAP provides the services of pre-qualified consultants to help local jurisdictions (especially small ones that lack financial and staff resources) better manage and maintain their streets and roads, using a PMS.

- **Outreach and Education** — Three times a year, MTC sponsors a PMS 'User Week' to educate local agency staff on a variety of issues such as PMS software training, pavement condition surveys, paving techniques and performance benchmarking. In addition, MTC operates a 'hotline' to answer MTC PMS software related questions, maintains the mtcps.org Web site as a comprehensive information source and publishes the *Street Talk* newsletter to provide program updates.
- **Advocacy** — MTC uses pavement condition and needs information gathered through the PMS software and the P-TAP program to advocate for state, federal and other funds for road maintenance. Pavement Management Program coordinators also work with local jurisdictions and congestion management agencies, to promote more attention to local street and road maintenance at the local, county and regional levels.

One important example of the value of the Pavement Management Program is its contribution to development of regional pavement maintenance needs estimates for the Transportation 2030 planning process. The estimates became the focus of an important regional dialogue over how to balance expected local road maintenance and transit shortfalls. In December 2003, MTC set aside nearly \$991 million in discretionary transportation funds for local street and road maintenance over the next 25 years, up from \$134 million in the 2001 Regional Transportation Plan.

Project Objectives

To help Bay Area cities and counties implement and maintain a PMS to assess pavement condition, determine pavement needs, identify the impact of inadequate budgets on pavement condition, establish optimum repair programs, allocate existing funds cost-effectively, and provide a basis for local funding decisions for pavement maintenance.

"Without P-TAP, there is no way we would have been able to obtain the technical support we need for managing our pavement management system."
— P-TAP grant recipient

Highlights

- Four cities became new users of MTC's PMS software, increasing the number of centerline miles¹ of pavement managed through MTC's PMS from 17,399 to 18,485.
- 39 P-TAP grants worth about \$650,000 were awarded in FY 2003–04. A little more than half of the grants awarded went to small jurisdictions (less than 100 centerline miles of pavement to maintain).

Project Funding

The following table provides P-TAP project funding information. The information is broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which include the local matching funds required of project sponsors. Regional funds are currently anticipated through FY 2006–07.

Pavement Management Technical Assistance Program

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03–04	04–05	05–06	06–07	07–08		
STP/CMAQ	\$700	\$680	\$754	\$732	\$0	\$ 2,866	89%
Other	91	88	98	95	0	372	11%
Total	\$791	\$768	\$852	\$827	\$0	\$3,238	

Target Customers

Any Bay Area city or county that has jurisdiction over road maintenance and seeks assistance to implement and/or maintain a Pavement Management System.

Measuring Performance

The success of the pavement management program is currently tracked by the following measures, with an emphasis on making sure that the needs of jurisdictions with limited financial and staff resources are met:

- Increase in number of centerline miles managed through MTC's PMS
- Number of jurisdictions receiving a P-TAP grant
- An increase in currently certified users of PMS software

Project Performance

Software

MTC uses its own agency resources to make enhancements to the PMS software, which is the region's critical management tool for tracking pavement condition data. In FY 2002–03, MTC released a new and improved version of its PMS software named StreetSaver™. MTC has established sales goals for the software program, and profits from its sale help offset Pavement Management Program project costs.

P-TAP

As of June 2004, 106 cities and counties in the Bay Area covering a total of 18,485 centerline miles managed their pavement condition through MTC's PMS. Of this amount, 1,086 centerline miles were added in FY 2003–04 when the cities of Larkspur, Millbrae, Oakland and San Rafael began using the system.

Figure 2 summarizes the number and dollar value of P-TAP grants awarded by cycle. Year-to-year increases or decreases in the number of jurisdictions assisted are the result of several different factors. Most significant is the cyclical nature of the state-

required certification process, which mandates pavement inspections every two years. In addition, the number of applications for P-TAP grants may be affected by annual fluctuations in jurisdictions' budgets or the need for help with particular, one-time-only pavement projects.

The 33 grants awarded in FY 2002–03 as part of P-TAP Cycle 5 were completed on schedule in FY 2003–04. In Cycle 5, local jurisdictions requested P-TAP grants for one of four project types:

- To inspect and record the pavement condition of local streets and roads, and perform budget analyses (19 projects)
- To develop plans, specifications and estimates for specific pavement maintenance projects (2 projects)
- To integrate PMS data with a geographical information system (GIS) to facilitate data analysis and presentation. (5 projects)
- A hybrid grant combining two of these three project types (7 projects)

¹ A centerline mile is a mile of road, regardless of how many lanes there are in each direction.

figure 2

P-TAP Grant Summary, FY 1998–99 through FY 2003–04

Year Awarded	Cycle 1 FY 98–99	Cycle 2 FY 99–00	Cycle 3 FY 00–01	Cycle 4 FY 01–02	Cycle 5 FY 02–03	Cycle 6 FY 03–04	TOTAL
Grants Awarded	27	32	32	39	33	39	202
Grant Funds Awarded	\$293,655	\$505,725	\$691,855	\$490,367	\$517,706	\$649,517	\$3,148,825

The P-TAP grants that fund the PMS updates assist jurisdictions in competing for state and federal funding for street and road maintenance. In order for a jurisdiction to be eligible to receive state and federal funds the jurisdiction must be certified as having an updated and active PMS. Certification status is granted to those jurisdictions that inspect their street networks on a biennial basis and can provide evidence that the jurisdiction is able to utilize its PMS as a tool for effectively managing its street and road repair programs. Prior to the P-TAP program, many jurisdictions were unable to meet the certification criteria or would allow their certification status to expire due to a lack of resources to perform inspections and update their PMS. With the P-TAP program, more than 90% of the 109 jurisdictions have maintained continuous certification status, making it possible for them to augment their maintenance budgets with state and federal funds. In Cycle 5, 19 jurisdictions were able to renew their certification status for an additional two years.

In Cycle 6, 52 percent of grants went to jurisdictions with fewer than 100 centerline miles of pavement, which is consistent with the project's emphasis on assisting smaller jurisdictions. The balance of grants awarded were fairly evenly split between jurisdictions with 100 to 300 centerline miles of pavement to maintain and those with more than 300 centerline miles.

“P-TAP has provided us with the technical support we need to effectively implement and manage our pavement management system.”
— P-TAP grant recipient

Future Expectations

In FY 2004–05, MTC's pavement program will continue to enhance its PMS software, provide training to local jurisdictions and track the success of the program in helping secure funding for local streets and roads based on pavement condition data gathered through the PMS. MTC has several pilot projects and new initiatives under way to improve the pavement program, including:

- Online software — MTC will demonstrate the concept of a centralized PMS. A centralized PMS will save MTC time providing software technical support and fixing bugs, especially those that arise from conflicts with software already on computers. MTC will allow customer access to its PMS software via remote server. Pavement condition data will be stored on the server and automatically saved on a daily basis. A new pricing model will be investigated — an annual subscription cost instead of the current one-time fee.
- Data collection — MTC is working with a software vendor to assess a new technique for gathering pavement condition data. Currently, condition information is gathered through a walking survey. The new approach uses a high-resolution camera mounted on a van. Images of the road are later analyzed to mine the pavement data. MTC will compare the driving results to the walking results and share a recommendation about this technique.
- Data consistency — MTC is implementing new techniques to evaluate pavement inspectors hired through P-TAP grants. The purpose is to improve consistency of pavement condition data collection by the inspectors. With more consistent data collection, reports of changes in pavement condition will be more accurate and credible.

Regional Signal Timing Program (RSTP)

The Bay Area has over 7,000 traffic signals, about half of which are operated using some form of traffic signal coordination during weekday peak periods. A majority of these traffic signals were timed nearly ten years ago under the Regional Traffic Signalization/Optimization Program (RTSOP) and have not been retimed since. To reap the maximum mobility and air quality benefits from traffic signal coordination, timing plans should be updated every three to five years, when traffic patterns or traffic volumes change significantly. The Regional Signal Timing Program (RSTP) was established in 2004 to ensure that the timing plans for the roughly 3,600 signals that are currently coordinated are updated at least once every five years.

Historically, local agencies responsible for traffic signal operations have relied heavily upon external funding sources, such as the Fuel Efficient Traffic Signal Management Program, the Regional Traffic Signalization/Optimization Program, the Transportation Fund for Clean Air — and now the RSTP — for large-scale signal retiming projects.

Under the RSTP, MTC provides local jurisdictions with consultant assistance for, and expertise in, developing and implementing up-to-date weekday peak-period signal coordination plans, including those that would facilitate the movement of transit vehicles (transit signal priority). Prior to the inception of the RSTP, MTC provided similar services under the Traffic Engineering Technical Assistance Program (TETAP — see page 54).

Under TETAP, an average of 66 traffic signals per year were being retimed, which is far below the rate of 700 per year that would need to be attained in order to retime all currently-coordinated signals every five years.

Project Objectives

The goal of the RSTP is to support implementation of traffic signal coordination; reduce delay and improve air quality along arterial roads during weekday peak periods; increase the attractiveness of transit as a travel option; and improve pedestrian and bicyclist safety at signalized intersections. The RSTP strives to meet these objectives by providing cost effective, high-quality technical assistance to local agencies and encouraging multi-agency cooperation and collaboration.

Highlights

FY 2003–04, the first year of the RSTP, included the following highlights:

- 22 projects involving over 630 traffic signals were initiated. Most of the projects will be completed before the end of the year.
- The largest single project will retime all eight expressways in Santa Clara County. The project involves over 100 traffic signals.
- 14 of the projects involve two or more agencies working together, with Caltrans as an active partner in thirteen of those projects.
- Pedestrian and bicyclist counts have been conducted at all 630 intersections. The counts will be used for the retiming efforts, and will also advance the region's ability to monitor pedestrian and bicyclist-involved collision rates.

Project Funding

The following table provides RSTP project funding information. The STP/CMAQ funds are those committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process. "Other" fund sources include the local matching funds required of project sponsors (which are actually provided by MTC). The amount of annual funding is based upon the cost to retime about 700 traffic signals per year. Regional funds are currently anticipated through FY 2006–07.

Regional Signal Timing Program

Funding Source	Fiscal Year (In thousands of 2004 dollars)					5-Year Total	Percent of Total
	03–04	04–05	05–06	06–07	07–08		
STP/CMAQ	\$1,200	\$1,165	\$1,320	\$1,373	\$0	\$5,058	89%
Other	155	151	171	178	0	655	11%
Total	\$1,355	\$1,316	\$1,491	\$1,551	\$0	\$5,713	

“Due to limited staffing levels in our Public Works Agency, we would have been unable to address increasing traffic volumes, and congestion, in conjunction with pedestrian, bicycle and transit needs without the benefit of the RSTP.”
— RSTP participant

figure 1

Traffic Signal Coordination Benefits

Performance Measure	SIGNAL COORDINATION PROJECT		
	FETSIM ¹	SV-ITS ² Proactive Signal Retiming	DRCOG ³
Travel Time Reduction	11.4%	16.0%	10.6%
Delay Reduction	24.9%	32.0%	N/A
Fuel Consumption Reduction	N/A	1,925 gallons/day	4,904 gallons/day
Pollutant Emissions Reduction	N/A	428 pounds/day	12,760 pounds/day

¹ FETSIM is the Fuel Efficient Traffic Signal Management Program. It was in effect from 1983 to 1993 and involved 12,245 signals. The FETSIM data was obtained from floating car runs conducted for 76 of 334 projects.

² SV-ITS is the Silicon Valley Intelligent Transportation Systems Program. The Proactive Signal Retiming project was conducted from 2002–03 and involved 223 signals.

³ DRCOG is the Denver Regional Council of Governments, which runs a program similar to RSTP. Data is provided for the 2003 projects, involving a total of 481 signals.

Target Customers

Any public agency with traffic signal systems that have not been retimed in the past three years and are currently capable of coordinated operation.

Measuring Performance

The success of the RSTP is measured by several factors including: cost effectiveness, customer satisfaction, and reductions in fuel consumption, pollutant emissions, travel time and delay.

Travel time reductions are measured by conducting travel time and delay runs along project corridors during ‘before’ and ‘after’ project conditions. Reductions in fuel consumption are reported in the software programs that assist traffic engineers in the development of optimal traffic signal coordination plans. Cost effectiveness and reductions in pollutant emissions are calculated using the latest methodology adopted by the Bay Area Air Quality Management District. Customer satisfaction is evaluated through surveys that are administered at the end of each project.

Project Performance

Grants were awarded to 22 projects resulting in a total of 634 signals being retimed. Performance of these ongoing projects will be reported in the *2005 Project Performance Report*.

Figure 1 presents reported benefits from other large-scale signal coordination programs, and gives an idea of the magnitude of expected improvements from the project.

Future Expectations

The RSTP has committed funding through FY 2006–07.

As long as funding is available, MTC will release an annual solicitation for RSTP applications in November, and assign the successful applications to consultants in January. The results of the 2004 cycle will be reported in the *2005 Project Performance Report*.

Traffic Engineering Technical Assistance Program (TETAP)

The Traffic Engineering Technical Assistance Program (TETAP) provides local jurisdictions with traffic engineering assistance and expertise on a broad range of projects aimed at improving safety and mobility along arterials, and promoting cooperation and collaboration across agency and modal boundaries. From the program’s inception in 1993 to 2003, 186 projects were funded that focused primarily on traffic operations, and about half of those entailed traffic signal coordination. The launching of the Regional Signal Timing Program (see page 52) in 2004 enabled the TETAP program to expand its focus to include projects that promote safety, mobility and system integration.

Under TETAP, traffic engineering assistance and expertise are provided through consultants retained by MTC. Project applications are submitted once a year and evaluated by MTC staff. Evaluation criteria include the immediacy of benefits expected from the project; need for consultant expertise; the extent of the area that will benefit from the project; number of jurisdictions involved; number of travel modes directly affected by the project; and the population of the sponsoring jurisdiction, as a surrogate measure for the need for consultant assistance. A wide array of project types are eligible for funding, including feasibility studies, before-and-after evaluations, development of technical information for grant applications, concepts of operations, conceptual designs, traffic operations evaluations, transit operations evaluations, technology comparisons, circulation studies and intelligent transportation system studies. Funding is approximately \$250,000 per year, with grants ranging from \$10,000 to \$30,000 per project. In 2004, on-call services are also being offered for small projects that would require less than \$2,000 of a consultant’s time.

Project Objectives

TETAP supports local implementation of projects that aim to: 1) identify, address, or prevent safety deficiencies on arterial roads; 2) improve the efficiency, reliability, and predictability of travel along arterial roads and the interface between arterial roads and freeways; 3) increase the efficiency and convenience of alternative modes of travel (transit, walking and bicycling on arterials); and 4) increase cooperation and collaboration between agencies and across jurisdictional and modal boundaries.

nience of alternative modes of travel (transit, walking and bicycling on arterials); and 4) increase cooperation and collaboration between agencies and across jurisdictional and modal boundaries.

Program administration objectives include ensuring distribution of benefits throughout the region, providing consultant expertise and assistance to small jurisdictions with limited resources, and providing cost effective, high-quality technical assistance to local agencies.

Highlights

- TETAP highlights for FY 2003–04 included the following:
- The focus of TETAP was expanded to projects that promote safety, mobility and system integration.
 - In 2004, requests exceeded the available funding by 483 percent, demonstrating the strong interest in this type of assistance. In order to benefit as many project sponsors as possible, many of the projects selected were scaled down to reduce their cost.

Project Funding

The following table provides TETAP project funding information broken out by STP/CMAQ funds committed in the 2001 RTP and Phase 1 of the Transportation 2030 planning process, and other fund sources, which include the local matching funds required of project sponsors. Regional funds are currently anticipated through FY 2006–07.

Traffic Engineering Technical Assistance Program							
Funding Source	Fiscal Year					5-Year Total	Percent of Total
	(In thousands of 2004 dollars)						
	03-04	04-05	05-06	06-07	07-08		
STP/CMAQ	\$250	\$243	\$283	\$275	\$0	\$1,051	89%
Other	32	31	37	36	0	136	11%
Total	\$282	\$274	\$320	\$311	\$0	\$1,187	

“The TETAP program has been instrumental in assisting our city — which has no assigned traffic engineering staff — to investigate and develop solutions to critical traffic engineering issues.”
— TETAP grant recipient

figure 1

TETAP Grant Award Information

	Total Applications	Total Grants	Operations Grants	Analysis or Evaluation Grants	Planning Grants	Multiagency Grants	Multimodal Grants	Small Agency Grants
Number	58	16	8	5	3	5	5	10
Percent*	N/A	100	50	31	19	31	31	63

* Grant categories are not mutually exclusive.

Target Customers

Any public agency that needs traffic engineering expertise or assistance for projects that would improve safety or mobility along arterials, or promote cooperation and collaboration across agency or modal boundaries.

Measuring Performance

The success of TETAP is primarily measured by five factors. These factors are: 1) the number of projects with immediate benefits; 2) the number of multiagency projects funded; 3) the number of multimodal projects funded; 4) the number of small jurisdictions served; and 5) customer satisfaction.

To gauge the immediacy of expected benefits, projects are categorized as operations, analysis or evaluation, or planning projects, with operations projects receiving priority. The 2000 Census population of the sponsoring jurisdiction is used as an indirect measure of the need for technical assistance, with jurisdictions having a population of less than 65,000 receiving priority. Customer satisfaction is evaluated through surveys that are administered at the end of each project.

Project Performance

TETAP grant award information and project performance are summarized in Figure 1. The results of the customer satisfaction survey will be presented in the *2005 Project Performance Report*, after the current year's projects have been completed. The expansion of the focus areas of the program beginning this year does not allow for a meaningful comparison of the program's performance in the previous years.

Future Expectations

TETAP has committed funding through FY 2006-07. The program is expected to continue supporting projects that promote safety and mobility along arterials, promote cooperation and collaboration across institutional and modal boundaries, and provide assistance to small jurisdictions with limited traffic engineering resources. Benefits will be reported on an annual basis.

APPENDIX

Advisory and Oversight Committees

Project	Advisory/Oversight Committee	Committee Members
TransLink®	<ul style="list-style-type: none"> TransLink® Management Group TransLink® Operating Group 	Transit operator general managers and staff representatives
FasTrak™	<ul style="list-style-type: none"> FasTrak™ Management Group Operations Group California Toll Operations Committee 	Bay Area Toll Authority, Golden Gate Bridge Highway and Transportation District, California Department of Transportation (Caltrans) District 4 and Headquarters, State Toll Authorities
TravInfo®	<ul style="list-style-type: none"> Freeway Management Program Executive Committee Technical Advisory Committee 	California Department of Transportation (Caltrans) District 4 and Headquarters, California Highway Patrol (CHP) Golden Gate Division, Federal Highway Administration (FHWA), and representatives from smart corridors
Regional Rideshare Program	<ul style="list-style-type: none"> Technical Advisory Committee Transportation Demand Management Association network 	Partners include the Bay Area Air Quality Management District, county congestion management agencies, transportation management associations, MTC, and other transportation organizations
Regional Transit Information System	<ul style="list-style-type: none"> Technical Advisory Committee Web Technical Advisory Committee 	Transit operator staff representatives and customer service staff, Webmasters of transit operators
Call Box Program	<ul style="list-style-type: none"> CalSAFE 	Statewide Service Authority for Freeways and Expressways managers (managers of other California call box programs), Caltrans Headquarters, CHP Headquarters
Freeway Service Patrol	<ul style="list-style-type: none"> Technical Advisory Committee 	Caltrans District 4 and CHP Golden Gate Division
Pavement Management Technical Assistance Program	<ul style="list-style-type: none"> Pavement Management System Users Group 	Public works staff from cities and counties
Regional Signal Timing Program	<ul style="list-style-type: none"> Arterial Operations Committee 	Traffic engineering staff from cities and counties, Caltrans representatives, congestion management agency representatives
Traffic Engineering Technical Assistance Program	<ul style="list-style-type: none"> Arterial Operations Committee 	Traffic engineering staff from cities and counties, Caltrans representatives, congestion management agency representatives

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